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# THE NEWS LETTER

## OF THE

### BUREAU OF PUBLIC ROADS

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A. C. ROSE, EDITOR

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DISCUSSION OF SUGGESTED SPECIFICATIONS  
FOR "DESIGNED-MIX" CONCRETE FOR PAVEMENTS

PREPARED BY  
F. H. JACKSON, OF THE DIVISION OF TESTS  
(NOT FOR RELEASE)

THE ACCOMPANYING SPECIFICATION HAS BEEN PREPARED BY THE DIVISION OF TESTS IN AN ENDEAVOR TO PROVIDE A METHOD OF UTILIZING IN ACTUAL PRACTICE THE VARIOUS PRINCIPLES GOVERNING THE DESIGN OF CONCRETE PAVING MIXTURES WHICH HAVE BEEN ESTABLISHED AS THE RESULT OF RESEARCH IN THE BUREAU'S LABORATORIES AND ELSEWHERE.

THESE GOVERNING PRINCIPLES MAY BE STATED BRIEFLY AS FOLLOWS:

1.- THAT FLEXURAL STRENGTH IS THE MOST IMPORTANT STRENGTH CHARACTERISTIC OF PAVEMENT CONCRETE AND THAT A CONCRETE PAVING MIXTURE SHOULD THEREFORE BE DESIGNED TO MEET A DEFINITE FLEXURAL STRENGTH REQUIREMENT RATHER THAN A DEFINITE CRUSHING STRENGTH REQUIREMENT.

2.- THAT SO MANY FACTORS AFFECT THE FLEXURAL STRENGTH OF CONCRETE THAT THE STRENGTH WHICH WILL BE OBTAINED BY THE USE OF ANY GIVEN COMBINATION OF MATERIALS CAN NOT BE DETERMINED BY ANY SO-CALLED CALCULATION METHOD, SUCH AS THE FINENESS-MODULUS METHOD, BUT MUST BE DETERMINED BY ACTUAL TRIAL IN THE LABORATORY.

3.- THAT, FOR ANY GIVEN COMBINATION OF MATERIALS, THE FLEXURAL AS WELL AS THE CRUSHING STRENGTH OF CONCRETE IS GOVERNED BY THE RATIO OF WATER TO CEMENT IN THE MIX, SUBSTANTIALLY IN ACCORDANCE WITH THE WATER-CEMENT-RATIO LAW, THIS FACT MAKES IT POSSIBLE TO DESIGN CONCRETE PAVING MIXTURES BY THE SO-CALLED "WATER-CEMENT-RATIO TRIAL-METHOD" AS DESCRIBED IN PUBLIC ROADS FOR AUGUST, 1928.

EXPLANATION OF PROPOSED SPECIFICATION

THE USE OF THIS TYPE OF SPECIFICATION PRESUPPOSES THAT THE DEPARTMENT WILL HAVE AVAILABLE FOR THE USE OF PROSPECTIVE BIDDERS THE PROPORTIONS BY WEIGHT AS WELL AS THE GRADING REQUIREMENTS FOR EACH COMBINATION OF AGGREGATES COMMERCIALY AVAILABLE FOR THE JOB UNDER CONSIDERATION. BY "COMMERCIALY" AVAILABLE IS MEANT THOSE SOURCES OF SUPPLY WITHIN A PRACTICAL SHIPPING RADIUS. THIS MAY AT FIRST THOUGHT APPEAR IMPRACTICAL DUE TO THE LARGE NUMBER OF TESTS INVOLVED. IT SHOULD BE POSSIBLE, HOWEVER, FOR ANY STATE DESIRING TO USE THIS TYPE OF SPECIFICATION TO DETERMINE IN ADVANCE THE PROPER PROPORTIONS FOR EACH OF THE REGULAR COMMERCIAL SOURCES OF SUPPLY AVAILABLE. SUCH TESTS ONCE MADE WOULD NOT HAVE TO BE REPEATED EVERY TIME A GIVEN COMBINATION OF MATERIALS WAS USED BUT





WOULD BE PART OF THE PERMANENT AVAILABLE RECORDS OF THE DEPARTMENT SUBJECT ONLY TO MODIFICATION WHEN THE CHARACTER OF EITHER ONE OR BOTH OF THE MATERIALS IN THE COMBINATION CHANGED. INVESTIGATIONS TO DETERMINE THE PROPORTIONS REQUIRED FOR VARIOUS MATERIALS COULD IN MANY STATES BE MADE PART OF A WINTER RESEARCH PROGRAM.

SIMILAR INFORMATION FROM LOCAL SOURCES OF SUPPLY WOULD BE SOMEWHAT MORE DIFFICULT TO OBTAIN. HOWEVER, A STATE DEPENDING TO ANY CONSIDERABLE EXTENT UPON LOCAL MATERIALS FOR CONCRETE AGGREGATES SHOULD, AND MANY OF THEM ALREADY DO, CONDUCT MATERIAL SURVEYS WELL IN ADVANCE OF CONSTRUCTION. THE NECESSARY TESTS COULD IN SUCH CASES BE MADE ON SAMPLES OF MATERIALS AS FAST AS OBTAINED AND THE INFORMATION FILED FOR REFERENCE WHEN IMPROVEMENTS ARE ABOUT TO BE MADE.

THE PROCEDURE SET UP IN THE ACCOMPANYING SPECIFICATION APPEARS TO BE THE MOST PRACTICAL METHOD OF RECOGNIZING THAT DIFFERENT MATERIALS MAY HAVE TO BE USED IN DIFFERENT PROPORTIONS TO OBTAIN THE SAME STRENGTH AND THAT WE MUST THEREFORE DESIGN FOR A GIVEN STRENGTH AND ADJUST OUR PROPORTIONS ACCORDINGLY. THE METHOD EVALUATES COMPETING AGGREGATES IN A FAIR AND RATIONAL MANNER; THAT IS, IN TERMS OF THEIR ABILITY TO MAKE CONCRETE OF DEFINITE STRENGTH. THIS AFTER ALL IS WHAT WE ARE INTERESTED IN - THE MATTER OF PROPORTIONS BEING ONLY A MEANS TO AN END. UNDER THIS SYSTEM, THE BIDDER KNOWS JUST HOW MUCH HE IS JUSTIFIED IN PAYING FOR EACH AVAILABLE AGGREGATE. HE MAY DETERMINE, FOR INSTANCE, WHETHER HE WILL BE JUSTIFIED IN PAYING A HIGHER PRICE FOR A SHIPPED-IN AGGREGATE, WHICH INCLUDES FREIGHT, THAN FOR A LOCAL MATERIAL OF POORER QUALITY AND CONSEQUENTLY REQUIRING MORE CEMENT. NO AGGREGATE WILL BE UNFAIRLY PENALIZED AND NO AGGREGATE WILL BE GIVEN AN UNFAIR ADVANTAGE.

AS AN ILLUSTRATION OF HOW THIS TYPE OF SPECIFICATION MIGHT WORK OUT IN PRACTICE, A HYPOTHETICAL CASE WILL BE CITED.

LET US SUPPOSE THAT A STATE ADVERTISE FOR BIDS TO CONSTRUCT A CERTAIN PIECE OF CONCRETE PAVEMENT, AND LET US FURTHER ASSUME THAT FOR THIS JOB COARSE AGGREGATES FROM THREE SOURCES ARE AVAILABLE. LET THESE BE IDENTIFIED AS AGGREGATES A, B, AND C. ALSO, THAT THERE ARE TWO FINE AGGREGATES AVAILABLE, D AND E. ALL OF THESE MATERIALS, IT WILL BE ASSUMED, MEET THE BASIC REQUIREMENTS OF THE SPECIFICATION. THE STATE HAS TESTED SAMPLES OBTAINED FROM EACH OF THESE SOURCES IN CONCRETE AND HAS AVAILABLE FOR THE USE OF BIDDERS A TABULATION OF PROPORTIONS REQUIRED FOR THE COMBINATIONS AVAILABLE TOGETHER WITH THE CORRESPONDING QUANTITIES PER CUBIC YARD OF CONCRETE. THIS INFORMATION MIGHT GO TO BIDDERS IN TABULAR FORM SOMEWHAT AS SHOWN BELOW, EXCEPT THAT THE VARIOUS SOURCES OF SUPPLY WOULD, OF COURSE, BE IDENTIFIED BY NAME AND LOCATION INSTEAD OF BY LETTER.





| COMBINATION: | PROPORTIONS |        |           | QUANTITIES PER CUBIC YARD |      |           |      |
|--------------|-------------|--------|-----------|---------------------------|------|-----------|------|
|              | COARSE      |        |           | COARSE                    |      |           |      |
|              | CEMENT      | SAND   | AGGREGATE | CEMENT                    | SAND | AGGREGATE |      |
|              | POUNDS      | POUNDS | POUNDS    | BAGS                      | TONS | TONS      |      |
| A AND D      | 94          | 182    | 371       | 6.4                       | .58  |           | 1.19 |
| A AND E      | 94          | 139    | 349       | 6.9                       | .49  |           | 1.19 |
| B AND D      | 94          | 225    | 415       | 5.4                       | .60  |           | 1.12 |
| B AND E      | 94          | 178    | 396       | 5.8                       | .51  |           | 1.14 |
| C AND D      | 94          | 161    | 374       | 6.1                       | .49  |           | 1.14 |
| C AND E      | 94          | 119    | 353       | 6.6                       | .40  |           | 1.16 |

THE ABOVE WEIGHTS AND QUANTITIES WHILE NOT ACTUALLY DERIVED FROM SPECIFIC LABORATORY TESTS REPRESENT NO GREATER RANGE IN PROPORTIONS FOR CONCRETE DESIGNED FOR A SPECIFIED STRENGTH THAN WOULD BE FOUND NECESSARY IN MANY SECTIONS WHERE AGGREGATES OF VARIABLE CHARACTER ARE AVAILABLE. THE VALUES ARE GIVEN MERELY TO INDICATE THE FORM WHICH THE INFORMATION MIGHT TAKE, AS WELL AS TO ILLUSTRATE REASONABLE VARIATIONS IN QUANTITIES WHICH MIGHT EASILY BE ENCOUNTERED. IN AN ACTUAL CASE THE GRADING REQUIREMENTS WHICH WOULD APPLY FOR EACH AGGREGATE WOULD ALSO BE FURNISHED. THIS INFORMATION IS NECESSARY IN ORDER THAT MATERIAL DEALERS MAY QUOTE INTELLIGENTLY ON REQUEST OF BIDDERS.

IT WILL BE OBSERVED FROM THE ABOVE TABLE THAT THERE IS A MAXIMUM DIFFERENCE OF 1.5 BAGS OF CEMENT PER CUBIC YARD, DEPENDING ENTIRELY UPON THE AGGREGATES SELECTED. IT WILL BE NOTED ALSO THAT SAND D IS SUFFICIENTLY HIGHER IN QUALITY TO JUSTIFY A REDUCTION IN THE CEMENT FACTOR OF ABOUT 0.5 BAGS IN THE COMBINATIONS IN WHICH IT IS USED. SAND E MAY BE ASSUMED TO BE A SOMEWHAT FINER SAND LOCALLY AVAILABLE, WHEREAS SAND D HAS TO BE SHIPPED IN. LIKEWISE COARSE AGGREGATE B IS SEEN TO BE MUCH HIGHER IN QUALITY THAN EITHER A OR C, THE DIFFERENTIAL BETWEEN A AND B BEING 1.0 BAG WHILE THAT BETWEEN B AND C IS ABOUT 0.7 BAG.

WITH THIS INFORMATION, TOGETHER WITH THE PRICES QUOTED ON THE VARIOUS MATERIALS, BEFORE HIM, EACH BIDDER IS IN A POSITION TO PREPARE AN INTELLIGENT BID ON THE WORK, IN SO FAR AS THE COST OF THE MATERIALS IS CONCERNED. HE KNOWS JUST HOW MUCH CEMENT, SAND, AND COARSE AGGREGATE HE WILL HAVE TO BUY FOR ANY COMBINATION HE MAY SELECT AS WELL AS THE UNIT COSTS IN EACH CASE DELIVERED. IT IS OBVIOUS THAT, OTHER THINGS BEING EQUAL, HE WILL BASE HIS BID ON THE COMBINATION SHOWING THE LOWEST TOTAL COST FOR ALL MATERIALS, INCLUDING THE CEMENT. THERE IS NO GUESS WORK ABOUT IT, AND FOR THIS REASON CLOSER BIDS AND THEREFORE LOWER PRICES SHOULD RESULT.



## PORTLAND CEMENT

IT IS OF COURSE REALIZED THAT THE QUALITY OF THE PORTLAND CEMENT USED IN THE CONCRETE MAY HAVE AS GREAT OR GREATER EFFECT ON STRENGTH AS THE TYPE OF AGGREGATE.

IT IS, HOWEVER, NOT QUITE SO SIMPLE TO CLOSELY CONTROL THE CEMENT ON A PUBLIC-WORKS JOB, ESPECIALLY WHERE THE CONTRACTOR BUYS HIS OWN CEMENT. ATTEMPTS TO CONTROL THE QUALITY OF THE CEMENT OTHER THAN TO REQUIRE THAT IT PASS THE AMERICAN SOCIETY FOR TESTING MATERIALS REQUIREMENTS ARE SELDOM MADE. SOME PROCEDURE WHICH WOULD ENABLE THE DEPARTMENT TO DESIGNATE NOT ONLY THE BRAND BUT THE ACTUAL MILL FROM WHICH THE CEMENT IS TO BE SHIPPED WOULD BE NECESSARY TO ACCOMPLISH MORE THAN THIS.

CLOSER CONTROL MAY BE OBTAINED WHERE THE STATE FURNISHES THE CEMENT. IN SUCH A CASE, HOWEVER, THE SCHEME OUTLINED ABOVE, WHICH REQUIRES VARYING AMOUNTS OF CEMENT, DEPENDING ON THE AGGREGATES USED, WOULD NOT OPERATE UNLESS SOME METHOD OF CHARGING THE CONTRACTOR FOR THE AMOUNT OF CEMENT HE USED WAS ADOPTED. SUCH A SCHEME WAS TRIED BY AT LEAST ONE STATE LAST YEAR.

BIDS UNDER THE ACCOMPANYING TYPE OF SPECIFICATION WOULD BE TAKEN IN THE USUAL MANNER; THAT IS, PRICE PER SQUARE YARD OF PAVEMENT IN PLACE. UPON NOTICE OF AWARD, THE SUCCESSFUL BIDDER WOULD BE REQUIRED TO IMMEDIATELY DESIGNATE THE PARTICULAR COMBINATION WHICH HE PROPOSES TO USE, UPON WHICH THE PROPORTIONS ARE OFFICIALLY DESIGNATED BY THE DEPARTMENT, AND THESE PROPORTIONS WILL GOVERN JUST SO LONG AS MATERIALS FROM THE SAME SOURCES AND OF THE SAME GRADINGS AS THOSE USED IN ESTABLISHING THE MIX ARE SUPPLIED.

THIS SPECIFICATION IT WILL BE OBSERVED PLACES THE RESPONSIBILITY OF SECURING CONCRETE OF THE REQUIRED QUALITY UPON THE DEPARTMENT, WHERE IT BELONGS. THE CONTRACTOR IS RELIEVED OF ANY RESPONSIBILITY AS TO THE STRENGTH OF THE CONCRETE OBTAINED, JUST SO LONG AS HE COMPLIES WITH ALL THE DETAILS OF THE SPECIFICATION AS REGARDS MATERIALS, MIXING, PLACING, FINISHING, AND CURING OF THE CONCRETE. TO HOLD THE CONTRACTOR RESPONSIBLE FOR THE STRENGTH OF THE CONCRETE AND AT THE SAME TIME SPECIFY THE PROPORTIONS AND OTHER DETAILS OF MANUFACTURE IS NOT AN EQUABLE CONTRACT. IF IT IS FOUND NECESSARY DURING CONSTRUCTION TO MODIFY THE PROPORTIONS TO OBTAIN THE DESIGN STRENGTH, PROVISIONS SHOULD BE MADE TO COMPENSATE THE CONTRACTOR FOR ANY ADDITIONAL COST. IT IS BELIEVED, HOWEVER, THAT IF THE ORIGINAL TESTS UPON WHICH THE DESIGN IS BASED HAVE BEEN CAREFULLY CONDUCTED IN THE LABORATORY THE NECESSITY FOR SUCH CHANGES WILL ONLY OCCASIONALLY OCCUR.

THE HISTORY OF THE  
 CITY OF BOSTON  
 FROM 1630 TO 1800

By JOHN G. REVERE  
 Author of "The History of the City of Boston from 1630 to 1800"

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IT MUST BE REMEMBERED, OF COURSE, THAT THE PROPORTIONS WHICH HAVE BEEN DESIGNATED HAVE BEEN DETERMINED ON THE BASIS OF LABORATORY TESTS MADE UNDER STANDARD TEMPERATURE AND HUMIDITY CONDITIONS. LET IT BE ASSUMED FOR INSTANCE THAT THE CONCRETE HAS BEEN DESIGNED TO GIVE A MODULUS OF RUPTURE OF 600 POUNDS PER SQUARE INCH AT 28 DAYS UNDER LABORATORY CONDITIONS. IT IS WELL KNOWN THAT THE TEMPERATURE AND HUMIDITY CONDITIONS WHICH OBTAIN ON THE JOB WILL INFLUENCE THE RATE AT WHICH THE CONCRETE DEVELOPS STRENGTH UNDER JOB CONDITIONS. IN OTHER WORDS, THE DESIGN STRENGTH, SAY 600 POUNDS PER SQUARE INCH, MAY BE ATTAINED UNDER CERTAIN FAVORABLE WEATHER CONDITIONS IN MUCH LESS THAN 28 DAYS, WHEREAS IN OTHER CASES IT MAY TAKE MORE THAN 28 DAYS. IN ORDER TO DETERMINE THE RATE AT WHICH THE PAVEMENT GAINS IN STRENGTH, WHICH IN TURN FIXES THE DATE ON WHICH IT MAY BE SAFELY OPENED TO TRAFFIC, IT IS NECESSARY TO MAKE BEAM TESTS ON THE JOB, USING SPECIMENS CURED UNDER AS NEARLY IDENTICAL CONDITIONS TO THE PAVEMENT AS POSSIBLE. FIELD TESTS OF THIS NATURE SHOULD NOT, HOWEVER, BE USED TO VERIFY THE CORRECTNESS OF THE ORIGINAL DESIGN BECAUSE THE SPECIMENS HAVE NOT BEEN CURED UNDER STANDARD CONDITIONS. IT IS A MISTAKE TO ATTEMPT TO VERIFY THE DESIGN BY MEANS OF FIELD TESTS. IF FOR ANY REASON IT IS SUSPECTED THAT THE ORIGINAL DESIGN IS AT FAULT ADDITIONAL LABORATORY TESTS UNDER STANDARD CONDITIONS SHOULD BE MADE, USING MATERIALS OBTAINED FROM THE JOB. IF UNDER THESE CONDITIONS THE PROPORTIONS ARE FOUND TO BE INCORRECT THEY SHOULD BE CHANGED, THE ADDITIONAL COST, IF ANY, BEING BORNE BY THE STATE AND NOT BY THE CONTRACTOR.

THE AGGREGATE SPECIFICATIONS CONTAINED IN THE ACCOMPANYING SPECIFICATION-DRAFT FOLLOW THE LATEST AMERICAN SOCIETY FOR TESTING MATERIALS AND AMERICAN CONCRETE INSTITUTE FORM. THE MOST INTERESTING FEATURE IS THE PROVISION FOR INSERTING INTERMEDIATE SIZE REQUIREMENTS, AFTER THE SOURCE OF MATERIAL HAS BEEN DESIGNATED, SO AS TO CONTROL THE UNIFORMITY OF THE GRADING. THE INTERMEDIATE SIZE REQUIREMENTS SHOULD, OF COURSE, BE SET SO AS TO INSURE MATERIAL OF ESSENTIALLY THE SAME GRADING AS THE SAMPLES USED IN ESTABLISHING THE DESIGN. IT WILL BE OBSERVED THAT TWO SIZES OF COARSE AGGREGATE ARE REQUIRED WHERE THE MAXIMUM SIZE IS GREATER THAN  $1\frac{1}{2}$  INCHES. IT IS FELT THAT THIS IS NECESSARY IN THE CASE OF THE COARSER AGGREGATES IN ORDER TO PREVENT SEGREGATION AND CONSEQUENT DANGER OF VARIATIONS FROM THE GRADATION USED IN ESTABLISHING THE PROPORTIONS. THE MATERIAL OVER  $1\frac{1}{2}$  INCHES IS DESIGNATED AS A SEPARATE SIZE AND THE PROPORTIONS GIVEN THE BIDDERS FOR ALL SUCH MATERIALS WILL SHOW THE TOTAL QUANTITIES OF MATERIALS OF EACH SIZE PER CUBIC YARD OF CONCRETE.

COMMENTS AND SUGGESTIONS REGARDING THIS SPECIFICATION ARE REQUESTED AND SHOULD BE ADDRESSED TO E. F. KELLEY, CHIEF, DIVISION OF TESTS, BUREAU OF PUBLIC ROADS, WASHINGTON, D. C.





## SUGGESTED SPECIFICATION FOR CONCRETE PAVEMENT

- 1.- DESCRIPTION: THIS ITEM SHALL CONSIST OF A WEARING COURSE COMPOSED OF PORTLAND-CEMENT CONCRETE, WITH OR WITHOUT REINFORCING STEEL AS REQUIRED, AND SHALL BE CONSTRUCTED ON THE PREPARED SUBGRADE OR COMPLETED AND ACCEPTED BASE COURSE IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN CONFORMITY WITH THE LINES, GRADES, THICKNESS, AND TYPICAL CROSS SECTION SHOWN ON PLANS.
- 2.- COMPOSITION OF CONCRETE: (A) THE PROPORTION OF CEMENT, AGGREGATES, AND WATER WILL BE FIXED BY THE DEPARTMENT ON THE BASIS OF LABORATORY TESTS OF CONCRETE, USING AGGREGATES FROM THE SAME SOURCES AND OF THE SAME GRADINGS AS WILL BE EMPLOYED ON THE WORK.

(B) THE MIXTURE WILL BE DESIGNED TO PRODUCE CONCRETE OF THE REQUIRED WORKABILITY HAVING A MODULUS OF RUPTURE OF AT LEAST \_\_\_\_\_ POUNDS PER SQUARE INCH AT 28 DAYS WHEN TESTED BY MEANS OF STANDARD LABORATORY METHODS.

NOTE TO BIDDERS: THE DEPARTMENT WILL FURNISH PROSPECTIVE BIDDERS, UPON REQUEST, THE PROPORTIONS BY WEIGHT WHICH WILL BE REQUIRED FOR ALL AGGREGATES FROM SUCH REGULAR ESTABLISHED COMMERCIAL SOURCES AS ARE AVAILABLE FOR USE ON THE PROJECT. THIS INFORMATION WILL ALSO INCLUDE THE GRADING REQUIREMENTS WHICH APPLY IN EACH CASE.

IN THE EVENT THAT ANY PROSPECTIVE BIDDER DESIRES TO USE LOCAL MATERIALS, THE DEPARTMENT WILL FURNISH THE ABOVE INFORMATION IN CASES WHERE PRELIMINARY TESTS TO ESTABLISH THE PROPORTIONS HAVE BEEN MADE. IN CASES WHERE NO PRELIMINARY TESTS HAVE BEEN MADE AND THERE IS NOT SUFFICIENT TIME TO CONDUCT THE NECESSARY TESTS BEFORE BIDS ARE RECEIVED, THE DEPARTMENT WILL FURNISH A PRELIMINARY ESTIMATE AS TO THE PROPORTIONS REQUIRED, SUBJECT TO MODIFICATION WITHOUT ADDITIONAL COMPENSATION TO THE CONTRACTOR SHOULD TESTS LATER INDICATE THAT THE PRELIMINARY PROPORTIONS WERE INCORRECT.

(C) IMMEDIATELY UPON NOTICE OF AWARD, THE CONTRACTOR SHALL FURNISH THE DEPARTMENT WITH THE EXACT LOCATION OF THE SOURCE OR SOURCES OF AGGREGATES WHICH HE PROPOSES TO USE. THE PROPORTIONS WILL THEN BE OFFICIALLY DESIGNATED BY THE DEPARTMENT IN ACCORDANCE WITH THE PROVISIONS OF SECTION 2 (A) ABOVE. SUCH PROPORTIONS WILL GOVERN SO LONG AS MATERIALS



ARE FURNISHED FROM THE SOURCES ORIGINALLY DESIGNATED AND SO LONG AS THEY CONTINUE TO MEET THE REQUIREMENTS HEREINAFTER SPECIFIED, SUBJECT ONLY TO SLIGHT VARIATIONS IN THE RELATIVE QUANTITIES OF FINE AND COARSE AGGREGATE FOR THE PURPOSE OF SECURING MAXIMUM WORKABILITY.

(D) IN THE EVENT THE CONTRACTOR WISHES TO USE AGGREGATES FROM SOURCES OTHER THAN THOSE ORIGINALLY DESIGNATED BY HIM, THE DEPARTMENT RESERVES THE RIGHT TO CHANGE THE PROPORTIONS TO MEET THE STRENGTH REQUIREMENTS GIVEN UNDER SECTION 2 (B) WITH THE AGGREGATES ACTUALLY FURNISHED.

3.- MATERIALS: (A) CEMENT: PORTLAND CEMENT SHALL CONFORM IN ALL RESPECTS TO THE REQUIREMENTS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS STANDARD SPECIFICATIONS C 9 - 26, WITH AMENDMENTS TO DATE OF CONTRACT.

(B) MIXING WATER: WATER SHALL BE CLEAN, CLEAR, FREE FROM OIL, ACID, ALKALI OR VEGETABLE MATTER AND SHALL NOT BE USED UNTIL THE SOURCE OF SUPPLY HAS BEEN APPROVED. IF AT ANY TIME THE WATER FROM THIS SOURCE SHALL BECOME OF UNSATISFACTORY QUALITY, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE SATISFACTORY WATER FROM SOME OTHER SOURCE. WATER OF DOUBTFUL QUALITY SHALL BE TESTED IN ACCORDANCE WITH THE METHOD PRESCRIBED IN U. S. DEPARTMENT OF AGRICULTURE BULLETIN No. 1216

(C) FINE AGGREGATE: (1) GENERAL CHARACTERISTICS: FINE AGGREGATE SHALL CONSIST OF NATURAL SAND OR OTHER APPROVED INERT MATERIALS WITH SIMILAR CHARACTERISTICS, OR A COMBINATION THEREOF, HAVING HARD, STRONG, DURABLE PARTICLES, AND SHALL CONFORM TO THE REQUIREMENTS OF THESE SPECIFICATIONS.

(2) DELETERIOUS SUBSTANCES: THE MAXIMUM PERCENTAGES OF DELETERIOUS SUBSTANCES SHALL NOT EXCEED THE FOLLOWING VALUES:

|  | PER CENT<br>BY WEIGHT |
|--|-----------------------|
| REMOVED BY DECANTATION   | 3                     |
| SHALE  | 1                     |
| COAL   | 1                     |
| CLAY LUMPS   | 1                     |
| OTHER LOCAL DELETERIOUS SUBSTANCES (SUCH AS<br>ALKALI, MICA, COATED GRAINS, SOFT AND FLAKY<br>PARTICLES) | -                     |

THE SUM OF THE PERCENTAGES OF SHALE, COAL, CLAY LUMPS, SOFT FRAGMENTS, AND OTHER DELETERIOUS SUBSTANCES SHALL NOT EXCEED 5 PER CENT BY WEIGHT.



ALL FINE AGGREGATE SHALL BE FREE FROM INJURIOUS AMOUNTS OF ORGANIC IMPURITIES. AGGREGATES SUBJECTED TO THE COLORIMETRIC TEST FOR ORGANIC IMPURITIES AND PRODUCING A COLOR DARKER THAN THE STANDARD SHALL BE REJECTED UNLESS TESTS OF THE MATERIAL IN CONCRETE INDICATE THAT THE ORGANIC IMPURITIES ARE NOT OF A DELETERIOUS NATURE.

(3) GRADING: FINE AGGREGATE SHALL BE WELL GRADED FROM COARSE TO FINE AND SHALL MEET THE FOLLOWING REQUIREMENTS:

|                        |           |    |               | PER CENT |
|------------------------|-----------|----|---------------|----------|
| PASSING 3/8-INCH SIEVE |           |    |               | 100      |
| Do                     | No. _____ | DO | TO            | --       |
| Do                     | No. 50    | DO | NOT MORE THAN | 35       |
| Do                     | No. 100   | DO | DO DO DO      | 5        |

THE INTERMEDIATE GRADING REQUIREMENTS ABOVE INDICATED ARE FOR THE PURPOSE OF CONTROLLING THE UNIFORMITY OF DELIVERIES OF MATERIALS. THEY SHOULD BE INSERTED AFTER THE CONTRACTOR HAS NOTIFIED THE DEPARTMENT AS TO THE SOURCE OF MATERIAL HE INTENDS TO FURNISH AND WILL BE SO SELECTED THAT MATERIAL WILL BE FURNISHED WHICH HAS THE SAME GRADATION AS THE SAMPLES USED IN ESTABLISHING THE PROPORTIONS.

(d) COARSE AGGREGATES: (1) GENERAL CHARACTERISTICS: COARSE AGGREGATE SHALL CONSIST OF CRUSHED STONE, GRAVEL, ELAST-FURNACE SLAG, OR OTHER APPROVED INERT MATERIALS OF SIMILAR CHARACTERISTICS, OR COMBINATIONS THEREOF, HAVING HARD, STRONG, DURABLE PIECES, FREE FROM ADHERENT COATINGS AND CONFORMING TO THE REQUIREMENTS OF THESE SPECIFICATIONS.

(2) DELETERIOUS SUBSTANCES: THE MAXIMUM PERCENTAGES OF DELETERIOUS SUBSTANCES SHALL NOT EXCEED THE FOLLOWING VALUES:

|  |       | PER CENT<br>BY WEIGHT |
|--|-------|-----------------------|
| REMOVED BY DECANTATION   | _____ | 1                     |
| SHALES   | _____ | 1                     |
| COAL   | _____ | 1                     |
| CLAY LUMPS   | _____ | $\frac{1}{4}$         |
| SOFT FRAGMENTS   | _____ | 5                     |
| OTHER LOCAL DELETERIOUS SUBSTANCES (SUCH AS<br>ALKALI, FRIABLE, THIN, ELONGATED, OR LAMI-<br>NATED PIECES) | _____ | -                     |

THE SUM OF THE PERCENTAGES OF SHALE, COAL, CLAY LUMPS, AND SOFT FRAGMENTS SHALL NOT EXCEED 5 PER CENT BY WEIGHT.





(3) QUALITY: COARSE AGGREGATES SHALL MEET THE FOLLOWING REQUIREMENTS:

CRUSHED STONE  
 PER CENT OF WEAR, NOT MORE THAN \_ \_ \_ \_ \_ 7  
 GRAVEL  
 PER CENT OF WEAR, NOT MORE THAN \_ \_ \_ \_ \_ 15  
 BLAST-FURNACE SLAG  
 WEIGHT PER CUBIC FOOT, NOT LESS THAN \_ \_ \_ \_ 70 LBS.

ALL COARSE AGGREGATES SHALL BE SUBJECTED TO FIVE ALTERNATIONS IN THE SODIUM SULPHATE TEST FOR SOUNDNESS AND THOSE SHOWING EVIDENCE OF MARKED CHECKING, CRACKING, OR DISINTEGRATION IN THIS TEST SHALL BE REJECTED UNLESS IT CAN BE SHOWN TO THE SATISFACTION OF THE DEPARTMENT THAT SUCH AGGREGATES HAVE PROVEN ENTIRELY SOUND IN SERVICE.

4.- GRADING: COARSE AGGREGATE SHALL BE WELL GRADED FROM COARSE TO FINE, AND SHALL MEET THE FOLLOWING REQUIREMENTS:

(A) WHEN THE COARSE AGGREGATE HAS A MAXIMUM SIZE OF  $1\frac{1}{2}$  INCHES OR LESS:

|                                      |       |               |  |  |          |
|--------------------------------------|-------|---------------|--|--|----------|
|                                      |       |               |  |  | PER CENT |
| PASSING A $1\frac{1}{2}$ -INCH SIEVE | _____ |               |  |  | 100      |
| Do DO _____ DO                       | _____ | TO            |  |  | --       |
| Do DO $\frac{3}{8}$ -INCH DO         | _____ | NOT MORE THAN |  |  | --       |

(B) WHEN THE COARSE AGGREGATE HAS A MAXIMUM SIZE GREATER THAN  $1\frac{1}{2}$  INCHES THE MATERIAL LESS THAN  $1\frac{1}{2}$  INCHES IN SIZE SHALL BE FURNISHED IN THE GRADING GIVEN UNDER (A) ABOVE AND THE MATERIAL LARGER THAN  $1\frac{1}{2}$  INCHES SHALL BE FURNISHED AS A SEPARATE SIZE CONFORMING TO THE FOLLOWING REQUIREMENTS:

|                               |       |               |  |  |          |
|-------------------------------|-------|---------------|--|--|----------|
|                               |       |               |  |  | PER CENT |
| PASSING A 3-INCH SIEVE        | _____ |               |  |  | 100      |
| Do DO $2\frac{1}{2}$ -INCH DO | _____ | 95 TO         |  |  | 100      |
| Do DO $1\frac{1}{2}$ -INCH DO | _____ | NOT MORE THAN |  |  | 15       |

THE INTERMEDIATE GRADING REQUIREMENTS INDICATED UNDER (A) ABOVE ARE FOR THE PURPOSE OF CONTROLLING THE UNIFORMITY OF DELIVERIES. THEY SHALL BE INSERTED AFTER THE CONTRACTOR HAS NOTIFIED THE DEPARTMENT AS TO THE SOURCE OF MATERIAL HE INTENDS TO USE AND WILL BE SO SELECTED THAT MATERIAL WILL BE FURNISHED WHICH WILL HAVE THE SAME GRADATION AS THE SAMPLE USED IN ESTABLISHING THE PROPORTION.



UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF PUBLIC ROADS

F-4 (1927)  
R. B. A.

LOCAL ROAD INCOME AND FUNDS AVAILABLE, 1927.

FOR USE OF LOCAL AUTHORITIES (COUNTY, TOWN AND DISTRICT)  
ON LOCAL ROADS AND BRIDGES DURING YEAR.

COMPILED (IN SOME CASES ESTIMATED)  
FROM RECORDS OF LOCAL AUTHORITIES.

| STATES         | TOTAL FUNDS AVAILABLE | BALANCE FROM PREVIOUS YEAR | TOTAL INCOME DURING YEAR | BOND SALE RECEIPTS | LOCAL ROAD TAX LEVY | APPROPRIATIONS FROM GENERAL FUND | MOTOR VEHICLE LICENSES | GASOLINE TAX RECEIPTS | FUNDS FROM STATE FOR LOCAL ROADS | MISCELLANEOUS INCOME | STATES         |
|----------------|-----------------------|----------------------------|--------------------------|--------------------|---------------------|----------------------------------|------------------------|-----------------------|----------------------------------|----------------------|----------------|
| ALABAMA        | \$ 12,347,378         | \$ 1,240,185               | \$ 11,107,193            | \$ 122,469         | \$ 3,855,452        | \$ 1,592,251                     | \$ 42,069              | \$ 3,227,680          | \$ ---                           | \$ 2,257,272         | ALABAMA        |
| ARIZONA        | 1,785,669             | 126,079                    | 1,659,590                | ---                | 529,713             | 210,825                          | 163,476                | 529,644               | 93,950                           | 132,072              | ARIZONA        |
| ARKANSAS       | 9,260,717             | 425,283                    | 9,685,000                | ---                | 2,250,000           | 149,500                          | ---                    | 6,661,217             | 6,661,217                        | 200,000              | ARKANSAS       |
| CALIFORNIA     | 45,285,289            | 14,453,816                 | 30,831,473               | 1,722,756          | 12,182,852          | 5,157,615                        | 2,900,689              | 7,821,574             | 135,109                          | 910,878              | CALIFORNIA     |
| COLORADO       | 5,533,946             | 269,239                    | 5,324,707                | ---                | 2,750,187           | 131,850                          | 494,341                | 1,173,059             | 551,853                          | 223,137              | COLORADO       |
| CONNECTICUT    | 2,881,345             | 81,956                     | 2,799,389                | ---                | ---                 | 2,799,389                        | ---                    | ---                   | ---                              | ---                  | CONNECTICUT    |
| DELAWARE       | 2,173,523             | 265,337                    | 1,908,186                | 310,431            | 230,054             | 1,081,229                        | ---                    | ---                   | 283,800                          | 2,672                | DELAWARE       |
| FLORIDA        | 93,329,153            | 33,226,007                 | 60,103,146               | 37,763,651         | 13,957,397          | 2,277,177                        | 1,108,076              | 3,104,991             | ---                              | 4,086,316            | FLORIDA        |
| GEORGIA        | 19,171,888            | 2,483,271                  | 16,688,617               | 1,585,593          | 9,705,067           | 72,715                           | ---                    | 2,078,750             | ---                              | 1,061,984            | GEORGIA        |
| IDAHO          | 6,906,797             | 2,079,131                  | 4,827,666                | 85,500             | 3,073,034           | ---                              | 1,223,062              | ---                   | 153,062                          | 313,008              | IDAHO          |
| ILLINOIS       | 29,312,568            | ---                        | 29,312,568               | 1,165,756          | 27,504,879          | ---                              | ---                    | ---                   | ---                              | 641,933              | ILLINOIS       |
| INDIANA        | 48,039,300            | 9,427,514                  | 38,611,786               | 10,824,028         | 24,405,904          | 1,531,086                        | ---                    | 1,848,074             | ---                              | 2,694                | INDIANA        |
| IOWA           | 27,153,964            | 4,501,214                  | 22,652,750               | 782,128            | 13,091,917          | 559,843                          | ---                    | 3,628,727             | 722,303                          | 3,888,032            | IOWA           |
| KANSAS         | 32,174,706            | 8,593,685                  | 23,581,021               | 2,708,067          | 12,733,634          | 595,000                          | ---                    | 7,054,320             | ---                              | 500,000              | KANSAS         |
| KENTUCKY       | 10,289,975            | ---                        | 10,289,975               | 3,461,503          | 6,101,879           | ---                              | 464,261                | ---                   | ---                              | 262,333              | KENTUCKY       |
| LOUISIANA      | 15,810,767            | 6,341,693                  | 10,469,074               | 820,781            | 6,790,495           | 1,617,218                        | ---                    | ---                   | 101,600                          | 1,138,982            | LOUISIANA      |
| MAINE          | 2,661,054             | 0. - 85,527                | 2,746,581                | 40,000             | 800,000             | 1,806,581                        | ---                    | ---                   | ---                              | 100,000              | MAINE          |
| MARYLAND       | 4,915,603             | ---                        | 4,915,603                | 1,309,682          | 2,478,367           | 798,491                          | ---                    | ---                   | 6,475,000                        | 329,063              | MARYLAND       |
| MASSACHUSETTS  | 15,209,500            | 149,500                    | 15,060,000               | 140,000            | 140,000             | 7,500,000                        | 7,080,476              | ---                   | 2,024,355                        | 345,000              | MASSACHUSETTS  |
| MICHIGAN       | 54,937,455            | 10,452,075                 | 44,485,380               | 7,423,536          | 26,480,709          | ---                              | ---                    | ---                   | 1,673,255                        | 1,536,304            | MICHIGAN       |
| MINNESOTA      | 23,452,459            | 873,000                    | 22,579,459               | 1,080,000          | 17,430,104          | 980,500                          | ---                    | ---                   | ---                              | 1,475,600            | MINNESOTA      |
| MISSISSIPPI    | 37,072,625            | 9,477,938                  | 27,594,687               | 9,112,103          | 10,351,462          | 2,556,089                        | 2,085,038              | 2,164,256             | ---                              | 1,326,379            | MISSISSIPPI    |
| MISSOURI       | 12,676,000            | 1,003,379                  | 11,672,621               | 455,856            | 9,187,477           | 759,260                          | ---                    | ---                   | 10,000                           | 1,260,028            | MISSOURI       |
| MONTANA        | 5,835,000             | 1,200,000                  | 4,635,000                | 120,000            | 2,650,000           | 320,000                          | 1,250,000              | ---                   | 75,000                           | 220,000              | MONTANA        |
| NEBRASKA       | 10,251,351            | 878,109                    | 9,373,252                | 35,000             | 5,640,108           | 715,697                          | 2,539,999              | ---                   | 52,135                           | 425,313              | NEBRASKA       |
| NEVADA         | 1,588,954             | 510,353                    | 1,078,601                | ---                | 630,385             | 113,207                          | 5,521                  | 235,812               | 1,586                            | 57,120               | NEVADA         |
| NEW HAMPSHIRE  | 3,786,930             | ---                        | 3,786,930                | ---                | 2,140,050           | 1,579,914                        | ---                    | ---                   | 66,606                           | 360                  | NEW HAMPSHIRE  |
| NEW JERSEY     | 29,571,947            | 1,124,433                  | 28,447,514               | 16,222,037         | ---                 | 8,536,550                        | 2,851,488              | ---                   | 837,439                          | ---                  | NEW JERSEY     |
| NEW MEXICO     | 731,858               | 70,325                     | 661,533                  | 221,086            | 209,217             | 67,731                           | 150,691                | 200                   | 3,727                            | 8,881                | NEW MEXICO     |
| NEW YORK       | 44,291,174            | 4,291,174                  | 40,000,000               | ---                | 29,966,761          | 4,743,169                        | ---                    | ---                   | 5,290,070                        | ---                  | NEW YORK       |
| NORTH CAROLINA | 35,364,000            | 1,158,000                  | 34,206,000               | 9,642,000          | 12,123,000          | 1,463,000                        | 647,721                | ---                   | ---                              | ---                  | NORTH CAROLINA |
| NORTH DAKOTA   | 5,939,145             | 1,350,000                  | 4,589,145                | ---                | 3,724,835           | 275,000                          | ---                    | ---                   | 1,589                            | ---                  | NORTH DAKOTA   |
| OHIO           | 86,170,000            | 13,198,000                 | 72,972,000               | 17,680,000         | 44,128,000          | ---                              | 2,400,000              | 3,620,000             | 5,250,000                        | ---                  | OHIO           |
| OKLAHOMA       | 17,288,300            | 2,049,722                  | 15,238,578               | 1,500,000          | 6,750,000           | 1,200,000                        | 2,589,260              | 2,399,318             | ---                              | 800,000              | OKLAHOMA       |
| OREGON         | 14,430,000            | 1,500,000                  | 12,930,000               | 4,000,000          | 4,500,000           | 800,000                          | 1,450,000              | 180,000               | 1,150,000                        | 850,000              | OREGON         |
| PENNSYLVANIA   | 77,609,800            | 17,241,000                 | 60,368,800               | 10,832,250         | 21,051,000          | 15,546,000                       | ---                    | 2,494,000             | 1,501,550                        | 8,944,000            | PENNSYLVANIA   |
| RHODE ISLAND   | 20,666,856            | 27,649                     | 20,639,207               | 50,000             | 1,798,246           | 821,829                          | ---                    | ---                   | 12,200                           | 47,376               | RHODE ISLAND   |
| SOUTH CAROLINA | 5,565,179             | 720,176                    | 4,845,000                | 13,657,844         | 3,901,260           | 1,135,235                        | ---                    | 1,903,049             | ---                              | 1,452,306            | SOUTH CAROLINA |
| SOUTH DAKOTA   | 23,760,358            | 8,180,345                  | 15,580,013               | 5,340,869          | 6,469,642           | 776,898                          | 1,187,519              | ---                   | 161,753                          | 157,747              | SOUTH DAKOTA   |
| TENNESSEE      | 41,355,000            | 3,112,000                  | 38,243,000               | 10,500,000         | 16,700,000          | 600,000                          | 4,143,000              | 110,572               | 150,000                          | 2,883,032            | TENNESSEE      |
| UTAH           | 2,054,211             | 574,980                    | 1,479,231                | ---                | 1,292,783           | 119,500                          | ---                    | ---                   | ---                              | 56,948               | UTAH           |
| VERMONT        | 1,200,000             | 15,000                     | 1,185,000                | ---                | 600,000             | 285,000                          | ---                    | ---                   | 300,000                          | ---                  | VERMONT        |
| VIRGINIA       | 14,312,000            | 4,110,000                  | 10,202,000               | 1,558,000          | 4,058,000           | ---                              | ---                    | 1,882,000             | ---                              | 2,704,000            | VIRGINIA       |
| WASHINGTON     | 10,450,000            | 750,000                    | 9,700,000                | 95,000             | 6,300,000           | 820,000                          | 780,000                | 115,000               | 780,000                          | 810,000              | WASHINGTON     |
| WEST VIRGINIA  | 16,870,000            | 3,600,000                  | 13,270,000               | 3,500,000          | 9,680,000           | ---                              | ---                    | ---                   | ---                              | 90,000               | WEST VIRGINIA  |
| WISCONSIN      | 34,016,924            | 1,861,258                  | 32,155,668               | 5,313,021          | 14,325,321          | 4,695,612                        | ---                    | 1,389,502             | 3,456,537                        | 2,975,675            | WISCONSIN      |
| WYOMING        | 726,625               | 1,061                      | 725,564                  | ---                | 87,583              | 498,247                          | ---                    | ---                   | 8,635                            | 131,099              | WYOMING        |
| TOTALS         | \$1,018,721,541       | \$178,107,618              | \$840,613,923            | \$181,080,953      | \$405,219,774       | \$72,692,737                     | \$40,239,856           | \$46,860,508          | \$37,984,371                     | \$56,535,744         | TOTALS         |

NOTES: 1/ LARGELY SHORT TERM NOTES.





UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF PUBLIC ROADS

F-5 (1927)  
R. S. A.

COMPILED (IN SOME CASES ESTIMATED)  
FROM RECORDS OF LOCAL AUTHORITIES.

LOCAL ROADS AND BRIDGE DISBURSEMENTS, 1927

BY LOCAL AUTHORITIES (COUNTY, TOWN AND DISTRICT)

| STATES         | TOTAL<br>DISBURSEMENTS | CONSTRUCTION  | MAINTENANCE   | MISCELLANEOUS<br>PURPOSES | PAYMENTS ON BONDS |                                | COUNTY FUNDS<br>TRANSFERRED<br>TO STATE | UNEXPENDED<br>BALANCE<br>END OF YEAR | STATES         |
|----------------|------------------------|---------------|---------------|---------------------------|-------------------|--------------------------------|---|--------------------------------------|----------------|
|                |                        |               |               |                           | INTEREST          | RETIREMENTS &<br>SINKING FUNDS |   |                                      |                |
| ALABAMA        | \$ 10,506,979          | \$ 1,367,174  | \$ 6,031,774  | \$ 220,263                | \$ 1,540,679      | \$ 1,346,089                   | \$ 34,239                               | \$ 1,807,160                         | ALABAMA        |
| ARIZONA        | 1,610,484              | 278,931       | 978,349       | 213,676                   | 76,398            | 53,130                         | ---                                     | 175,186                              | ARIZONA        |
| ARKANSAS       | 8,900,000              | 750,000       | 2,176,000     | 75,000                    | 3,250,000         | 2,650,000                      | ---                                     | 786,000                              | ARKANSAS       |
| CALIFORNIA     | 30,737,210             | 9,963,444     | 12,936,036    | 2,692,191                 | 2,520,766         | 2,624,773                      | 1,480,997                               | 13,067,082                           | CALIFORNIA     |
| COLORADO       | 6,040,541              | 1,096,961     | 3,323,881     | 603,013                   | 2,766             | 14,920                         | 99,188                                  | 454,217                              | COLORADO       |
| CONNECTICUT    | 2,961,557              | 636,062       | 2,326,506     | ---                       | ---               | ---                            | ---                                     | 0. 80,212                            | CONNECTICUT    |
| DELAWARE       | 1,688,854              | 421,203       | 473,479       | 40,092                    | 467,580           | 266,500                        | 338,319                                 | 166,350                              | DELAWARE       |
| FLORIDA        | 53,792,548             | 31,991,462    | 7,988,682     | 5,022,676                 | 6,863,440         | 1,936,346                      | 3,613,579                               | 36,923,029                           | FLORIDA        |
| GEORGIA        | 14,336,913             | 6,034,796     | 6,385,598     | 693,367                   | 1,676,215         | 747,938                        | 2,683,439                               | 2,161,536                            | GEORGIA        |
| IDAHO          | 4,470,362              | 819,882       | 1,252,068     | 629,538                   | 958,677           | 810,207                        | 580,033                                 | 1,918,402                            | IDAHO          |
| ILLINOIS       | 27,661,336             | 8,017,619     | 15,932,539    | 824,867                   | 3/ 1,056,311      | 3/ 1,831,000                   | ---                                     | 1,651,232                            | ILLINOIS       |
| INDIANA        | 37,224,587             | 10,217,013    | 11,036,743    | 736,710                   | 3,708,845         | 11,527,276                     | 39,039                                  | 10,775,674                           | INDIANA        |
| IOWA           | 24,274,660             | 9,193,549     | 11,806,006    | 1,161,081                 | 975,000           | 1,140,015                      | ---                                     | 2,879,314                            | IOWA           |
| KANSAS         | 17,687,467             | 8,003,806     | 6,495,726     | 1,478,961                 | 917,406           | 1,591,881                      | 7,181,665                               | 7,305,574                            | KANSAS         |
| KENTUCKY       | 6,898,225              | 1,075,656     | 3,478,262     | 448,672                   | 3/ 917,735        | 3/ 976,000                     | 2,201,976                               | 1,189,775                            | KENTUCKY       |
| LOUISIANA      | 11,806,189             | 3,066,674     | 2,864,886     | 527,321                   | 2,784,408         | 2,563,900                      | 653,335                                 | 4,451,243                            | LOUISIANA      |
| MAINE          | 2,700,000              | 350,000       | 2,100,000     | 128,000                   | 60,000            | 62,000                         | ---                                     | 0. 38,946                            | MAINE          |
| MARYLAND       | 3,957,872              | 1,283,954     | 1,868,649     | 172,950                   | 384,863           | 257,788                        | 1,019,870                               | 72,139                               | MARYLAND       |
| MASSACHUSETTS  | 14,882,100             | 7,934,000     | 6,491,500     | 84,600                    | 32,000            | 340,000                        | 103,400                                 | 224,000                              | MASSACHUSETTS  |
| MICHIGAN       | 40,692,818             | 18,495,989    | 12,981,241    | ---                       | 3/ 2,672,608      | 3/ 6,543,000                   | ---                                     | 14,244,637                           | MICHIGAN       |
| MINNESOTA      | 23,446,860             | 14,701,450    | 4,715,800     | 1,999,600                 | 1,140,000         | 890,000                        | ---                                     | 5,609                                | MINNESOTA      |
| MISSISSIPPI    | 18,130,260             | 2,247,454     | 8,733,022     | 252,642                   | 3,702,856         | 3,194,266                      | 6,789,427                               | 13,152,938                           | MISSISSIPPI    |
| MISSOURI       | 11,176,000             | 3,800,000     | 6,366,000     | 984,600                   | 625,000           | 821,400                        | 55,000                                  | 1,500,000                            | MISSOURI       |
| MONTANA        | 4,765,000              | 1,000,000     | 2,200,000     | 275,000                   | 540,000           | 750,000                        | ---                                     | 1,005,000                            | MONTANA        |
| NEBRASKA       | 8,904,301              | 4,603,338     | 3,381,896     | 630,502                   | 190,453           | 98,112                         | 386,402                                 | 1,262,121                            | NEBRASKA       |
| NEVADA         | 678,814                | 90,842        | 337,886       | 286,207                   | 71,407            | ---                            | 1,579,914                               | 523,738                              | NEVADA         |
| NEW HAMPSHIRE  | 27,188,078             | 8,811,426     | 4,918,146     | 475,138                   | 2,676,816         | 10,306,653                     | ---                                     | 2,383,869                            | NEW HAMPSHIRE  |
| NEW JERSEY     | 492,159                | 123,634       | 280,616       | 58,451                    | 21,969            | 7,569                          | 27,687                                  | 212,012                              | NEW JERSEY     |
| NEW MEXICO     | 40,000,000             | 29,000,000    | 4,000,000     | 2,800,000                 | 2,700,000         | 1,500,000                      | ---                                     | 4,291,174                            | NEW MEXICO     |
| NEW YORK       | 26,721,000             | 6,306,000     | 6,121,000     | 1,244,000                 | 5,202,000         | 7,848,000                      | 6,996,000                               | 3,647,000                            | NEW YORK       |
| NORTH CAROLINA | 4,229,550              | 3,642,300     | 496,250       | 91,000                    | ---               | ---                            | ---                                     | 1,769,595                            | NORTH CAROLINA |
| NORTH DAKOTA   | 62,366,000             | 22,191,000    | 13,553,000    | 2,240,000                 | 5,517,000         | 18,865,000                     | 11,713,000                              | 12,091,000                           | NORTH DAKOTA   |
| OHIO           | 12,726,000             | 2,675,000     | 7,200,000     | 800,000                   | 1,100,000         | 950,000                        | ---                                     | 1,431,300                            | OHIO           |
| OKLAHOMA       | 12,710,000             | 7,200,000     | 2,750,000     | 410,000                   | 1,100,000         | 1,250,000                      | ---                                     | 1,720,000                            | OKLAHOMA       |
| OREGON         | 54,715,400             | 22,024,700    | 12,794,500    | 6,304,700                 | 5,134,500         | 8,457,300                      | 8,893,600                               | 14,000,800                           | OREGON         |
| PENNSYLVANIA   | 953,706                | 283,219       | 527,084       | 34,688                    | 34,115            | 74,600                         | ---                                     | 5,248                                | PENNSYLVANIA   |
| RHODE ISLAND   | 6,356,840              | 1,909,166     | 2,040,819     | 131,248                   | 1,385,612         | 889,956                        | 11,372,580                              | 2,937,436                            | RHODE ISLAND   |
| SOUTH CAROLINA | 6,222,827              | 3,251,782     | 2,777,645     | 156,900                   | 7,800             | 29,000                         | 554,777                                 | 0. 1,212,425                         | SOUTH CAROLINA |
| SOUTH DAKOTA   | 11,143,351             | 3,722,286     | 3,569,829     | 360,114                   | 2,271,067         | 1,226,255                      | 4,756,713                               | 7,654,294                            | SOUTH DAKOTA   |
| TENNESSEE      | 28,170,000             | 6,225,000     | 9,320,000     | 1,065,000                 | 8,360,000         | 5,200,000                      | 1,817,000                               | 11,368,000                           | TENNESSEE      |
| TEXAS          | 1,276,964              | 356,909       | 608,261       | 86,908                    | 155,896           | 69,000                         | 222,486                                 | 654,761                              | TEXAS          |
| UTAH           | 1,000,000              | 400,000       | 600,000       | ---                       | ---               | ---                            | 200,000                                 | ---                                  | UTAH           |
| VERMONT        | 10,654,000             | 2,124,000     | 5,654,000     | ---                       | 1,307,000         | 1,569,000                      | ---                                     | 3,658,000                            | VERMONT        |
| VIRGINIA       | 9,694,000              | 3,800,000     | 3,900,000     | 400,000                   | 794,000           | 800,000                        | ---                                     | 756,000                              | VIRGINIA       |
| WASHINGTON     | 13,370,000             | 7,220,000     | 3,000,000     | 200,000                   | 1,300,000         | 1,650,000                      | ---                                     | 3,500,000                            | WASHINGTON     |
| WEST VIRGINIA  | 27,387,481             | 11,599,254    | 10,119,190    | 4,040,697                 | 682,693           | 945,647                        | 4,463,792                               | 2,165,651                            | WEST VIRGINIA  |
| WISCONSIN      | 736,449                | 262,261       | 366,664       | 42,024                    | 40,500            | 25,000                         | 7,314                                   | 0. 16,138                            | WISCONSIN      |
| WYOMING        | ---                    | ---           | ---           | ---                       | ---               | ---                            | ---                                     | ---                                  | WYOMING        |
| TOTALS         | \$748,245,735          | \$289,180,355 | \$237,970,467 | \$41,282,865              | \$76,015,780      | \$104,796,268                  | \$80,931,710                            | \$189,544,096                        | TOTALS         |

NOTES: 1/ INCLUDES "OVERHEAD" (ADMINISTRATION AND ENGINEERING) FORMERLY SHOWN ON F-5 TABLES.  
2/ NOT APPLICABLE TO LOCAL ROAD AND BRIDGE DISBURSEMENTS.  
3/ TOTAL PAYMENTS ON BONDS HAVE BEEN APPROXIMATELY ALLOCATED AS SHOWN.  
4/ TOTAL OF NEXT FIVE COLUMNS ONLY.





UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF PUBLIC ROADS

F-1 (1928)  
R.S.A.

STATE HIGHWAY INCOME AND FUND AVAILABLE DURING 1928.  
FOR STATE HIGHWAY AND BRIDGE WORK UNDER SUPERVISION OF STATE HIGHWAY DEPARTMENTS  
(COMPILED FROM REPORTS OF STATE AUTHORITIES)

| STATE          | FISCAL YEAR<br>END | TOTAL FUND<br>AVAILABLE<br>FOR USE OF<br>STATE HIGHWAY<br>DEPARTMENT | BALANCE AT<br>BEGINNING OF<br>FISCAL YEAR | TOTAL INCOME<br>FOR STATE<br>HIGHWAYS<br>DURING<br>FISCAL YEAR | STATE TAX<br>LEVIED FOR<br>STATE HIGHWAYS | APPROPRIATION<br>BY STATE FOR<br>HIGHWAYS | MOTOR VEHICLE<br>FEES, ETC.,<br>ALLOTTED TO<br>STATE HIGHWAYS | GASOLINE TAX<br>RECEIPTS, ETC.,<br>ALLOTTED TO<br>STATE HIGHWAYS | MISCELLANEOUS<br>INCOME FOR<br>STATE HIGHWAYS | STATE BONDS<br>AND NOTES<br>ISSUED FOR<br>STATE HIGHWAYS | FEDERAL AID<br>POST ROADS<br>FUND ALLOT-<br>MENTS USED | FUND TRANSFERS<br>FROM LOCAL<br>AUTHORITIES FOR<br>STATE HIGHWAYS | STATE          |
|----------------|--------------------|--|---|--|---|---|---|--|---|--|--|---|----------------|
| ALABAMA        | 9/30               | \$21,022,743   | \$1,933,783                               | \$19,088,960   | -   | -   | \$2,635,140   | \$3,184,150  | \$58,410                                      | \$10,084,376   | \$2,977,292  | \$129,013   | ALABAMA        |
| ARIZONA        | 5/30               | 3,168,611  | 172,189                                   | 3,340,700  | \$151,972                                 | -   | 487,352   | 1,038,964  | 30  | -  | 482,435  | 5,700   | ARIZONA        |
| ARKANSAS       | 12/31              | 35,313,685   | 7,532,108                                 | 28,881,756   | -   | -   | 3,788,004   | 5,382,782  | 45,842  | 18,173,149   | 1,118,578  | 174,501   | ARKANSAS       |
| CALIFORNIA     | 12/31              | 38,635,114   | 7,089,649                                 | 31,465,465   | -   | -   | 3,694,541   | 19,339,325   | 818,268                                       | -  | 2,457,794  | 391,434   | CALIFORNIA     |
| COLORADO       | 11/30              | 8,478,010  | 1,844,570                                 | 6,633,440  | 1,359,837                                 | -   | 835,935   | 2,685,355  | 39,763  | -  | 1,730,450  | -   | COLORADO       |
| CONNECTICUT    | 9/30               | 22,953,484   | 12,778,457                                | 10,175,027   | -   | 1,583,290                                 | 3,108,833   | 3,108,833  | 875,585                                       | -  | 415,293  | -   | CONNECTICUT    |
| DELAWARE       | 12/31              | 3,616,067  | 251,760                                   | 3,364,307  | -   | -   | 928,162   | 788,963  | 55,086  | 985,557  | 210,454  | 379,555   | DELAWARE       |
| FLORIDA        | 12/31              | 14,586,540   | 592,015                                   | 14,094,525   | 4,849                                     | -   | 3,423,340   | 6,770,508  | 43,351  | -  | 872,514  | 2,973,858   | FLORIDA        |
| GEORGIA        | 12/31              | 13,169,348   | 250,988                                   | 12,918,363   | -   | -   | 3,810,119   | 5,151,315  | 23,205  | -  | 1,900,251  | 1,933,773   | GEORGIA        |
| IDAHO          | 12/31              | 5,447,374  | 720,444                                   | 4,726,930  | -   | -   | 188,687   | 2,006,055  | 25,534  | -  | 1,244,897  | 953,179   | IDAHO          |
| ILLINOIS       | 12/31              | 8,439,569  | 2,439,569                                 | 5,459,168  | -   | 289,532                                   | 15,089,830  | 2,006,055  | 380,827                                       | 35,155,287   | 4,054,552  | 241,381   | ILLINOIS       |
| INDIANA        | 9/30               | 17,498,314   | 2,414,905                                 | 15,073,408   | -   | -   | 5,435,135   | 7,287,318  | 453,840                                       | -  | 2,555,735  | -   | INDIANA        |
| IOWA           | 11/30              | 43,639,837   | 5,059,587                                 | 37,981,250   | -   | -   | 10,037,392  | 4,785,387  | 45,851  | 37,201,805   | 2,831,580  | 92,424  | IOWA           |
| KANSAS         | 12/31              | 13,803,615   | 2,187                                     | 13,901,453   | -   | 150,000                                   | 3,151,015   | 4,258,228  | 208,487                                       | -  | 2,287,995  | 4,056,189   | KANSAS         |
| KENTUCKY       | 3/31               | 14,871,014   | 867,823                                   | 14,213,091   | 906,335                                   | -   | 3,699,431   | 4,575,427  | 208,487                                       | -  | 2,007,818  | 2,717,593   | KENTUCKY       |
| LOUISIANA      | 12/31              | 12,753,454   | 2,243,385                                 | 10,510,069   | -   | -   | 4,382,710   | 3,277,555  | 483,597                                       | -  | 953,937  | 1,412,180   | LOUISIANA      |
| MAINE          | 12/31              | 13,431,801   | 1,252,396                                 | 12,189,405   | 1,024,538                                 | 1,555,000                                 | 2,714,581   | 3,209,128  | 456,317                                       | 974,029  | 241,492  | 2,095,320   | MAINE          |
| MARYLAND       | 9/30               | 12,645,957   | 2,112,410                                 | 10,433,457   | -   | 49,918                                    | 1,962,051   | 4,359,981  | 736,354                                       | 1,239,185  | 730,485  | 1,355,475   | MARYLAND       |
| MASSACHUSETTS  | 12/31              | 17,509,783   | 559,119                                   | 18,068,902   | 998,943                                   | 87  | 12,178,301  | 4,575,427  | 25,586  | -  | 565,420  | 2,877,308   | MASSACHUSETTS  |
| MICHIGAN       | 5/30               | 40,854,352   | 1,535,374                                 | 39,419,006   | -   | -   | 18,678,327  | 15,359,854   | 1,157,406                                     | -  | 2,359,936  | 947,463   | MICHIGAN       |
| MINNESOTA      | 12/31              | 29,554,142   | 8,902,898                                 | 20,751,244   | 1,921,649                                 | -   | 10,068,728  | 5,599,973  | 941,675                                       | -  | 2,841,030  | 1,800,984   | MINNESOTA      |
| MISSISSIPPI    | 12/31              | 7,301,515  | 1,079,219                                 | 6,222,296  | -   | -   | 13,154,161  | 2,589,728  | 115,394                                       | -  | 1,570,593  | -   | MISSISSIPPI    |
| MISSOURI       | 12/31              | 23,386,555   | 4,584,514                                 | 18,802,041   | 95,955                                    | -   | 8,701,070   | 6,784,350  | 531,352                                       | -  | 2,382,885  | -   | MISSOURI       |
| MONTANA        | 5/30               | 4,082,414  | 251,573                                   | 3,830,841  | -   | -   | -   | 1,743,878  | 41,440  | -  | 1,746,846  | 300,180   | MONTANA        |
| NEBRASKA       | 12/31              | 7,394,151  | 244,877                                   | 7,149,274  | -   | 100,000                                   | 1,149,787   | 3,932,053  | -   | -  | 1,816,034  | 141,550   | NEBRASKA       |
| NEVADA         | 11/30              | 2,191,348  | -   | 2,235,262  | 8,647                                     | -   | 249,111   | 259,731  | 275,682                                       | 100,000  | 1,040,934  | 301,157   | NEVADA         |
| NEW HAMPSHIRE  | 12/31              | 8,887,516  | 1,318,184                                 | 5,569,332  | -   | -   | 1,905,427   | 1,412,601  | 231,582                                       | -  | 372,580  | 1,546,222   | NEW HAMPSHIRE  |
| NEW JERSEY     | 12/31              | 39,728,896   | 10,135,215                                | 29,593,681   | 2,624,827                                 | -   | 12,247,354  | 8,352,255  | 2,068   | 5,010,077  | 732,184  | 513,975   | NEW JERSEY     |
| NEW MEXICO     | 12/31              | 7,599,074  | 307,441                                   | 7,291,633  | 715,751                                   | -   | 371,533   | 1,959,714  | 31,434  | 2,153,424  | 1,819,449  | 238,229   | NEW MEXICO     |
| NORTH CAROLINA | 5/30               | 105,824,633  | 44,585,290                                | 62,239,343   | -   | 5/29,465,169                              | 80,000,000  | 9,375,988  | 277,524                                       | 10,000,000   | 3,535,217  | 9,075,185   | NORTH CAROLINA |
| NORTH DAKOTA   | 12/31              | 42,293,334   | 9,812,428                                 | 32,480,906   | -   | 170,000                                   | 9,565,719   | 1,460,081  | 28,775  | -  | 1,715,910  | 194,555   | NORTH DAKOTA   |
| OHIO           | 12/31              | 37,264,317   | 954,584                                   | 35,309,732   | -   | 175,364                                   | 6,078,757   | 15,472,005   | 583,210                                       | -  | 3,347,314  | 10,555,073  | OHIO           |
| OKLAHOMA       | 12/31              | 3,195,819  | 1,024,455                                 | 2,171,364  | -   | -   | 1,495,599   | 1,495,599  | 151,620                                       | -  | 1,597,995  | 3,972,513   | OKLAHOMA       |
| OREGON         | 11/30              | 1,033,097  | 1,033,097                                 | 10,402,435   | -   | -   | 4,925,629   | 3,887,889  | 552,440                                       | -  | 583,526  | -   | OREGON         |
| PENNSYLVANIA   | 12/31              | 80,053,851   | 24,148,555                                | 55,905,295   | -   | 15,110                                    | 27,212,931  | 18,789,882   | 204,597                                       | -  | 3,620,595  | 5,893,850   | PENNSYLVANIA   |
| RHODE ISLAND   | 11/30              | 7,724,415  | 3,342,834                                 | 4,381,602  | -   | 9,452                                     | 2,295,995   | 1,299,972  | 5,000   | 255,092  | 425,280  | 70,000  | RHODE ISLAND   |
| SOUTH CAROLINA | 12/31              | 27,800,352   | 9,194,115                                 | 18,606,237   | -   | -   | 2,368,954   | 3,285,686  | 143,988                                       | -  | 1,134,182  | 11,575,525  | SOUTH CAROLINA |
| SOUTH DAKOTA   | 12/31              | 6,000,568  | 6,250                                     | 5,994,318  | 33,686                                    | 600,000                                   | 1,455,724   | 2,278,031  | 61,391  | -  | 1,586,487  | -   | SOUTH DAKOTA   |
| TENNESSEE      | 5/30               | 24,837,771   | -185,182                                  | 25,022,953   | 1,705                                     | -   | 3,957,454   | 4,638,134  | 135,019                                       | 8,010,508  | 1,151,092  | 7,099,027   | TENNESSEE      |
| TEXAS          | 9/31               | 39,290,289   | 6,850,201                                 | 33,440,087   | -   | -   | 9,958,624   | 14,408,319   | 225,346                                       | -  | 4,277,455  | 4,559,352   | TEXAS          |
| UTAH           | 12/31              | 4,718,618  | 91,770                                    | 4,626,848  | -   | -   | 413,000   | 2,215,500  | 264,553                                       | -  | 1,106,418  | 624,457   | UTAH           |
| VERMONT        | 6/30               | 10,005,200   | 85,704                                    | 8,909,496  | 355,999                                   | 344,608                                   | 2,034,333   | 971,983  | 254,531                                       | 5,000,000  | 594,118  | 243,924   | VERMONT        |
| VIRGINIA       | 5/30               | 15,400,832   | 994,396                                   | 15,409,436   | 1,337,550                                 | 719,560                                   | 5,080,969   | 5,546,184  | 1,210,425                                     | -  | 1,439,050  | 124,748   | VIRGINIA       |
| WASHINGTON     | 12/31              | 13,933,175   | -   | 13,933,175   | -   | -   | 5,251,011   | 4,172,558  | 26,572  | -  | 1,379,931  | 2,059,575   | WASHINGTON     |
| WEST VIRGINIA  | 12/31              | 18,156,145   | 4,593,918                                 | 13,562,227   | -   | -   | 4,355,371   | 4,243,396  | 250,560                                       | 4,250,000  | 2,589,165  | 3,755   | WEST VIRGINIA  |
| WISCONSIN      | 6/30               | 22,552,445   | 4,003,440                                 | 22,250,705   | -   | -   | 10,648,571  | 5,351,944  | 5/  | -  | 2,589,165  | 2,355,591   | WISCONSIN      |
| WYOMING        | 12/31              | 4,058,889  | 525,482                                   | 3,533,407  | 98,539                                    | -   | 555,578   | -  | 497,721                                       | -  | 1,350,516  | 29,007  | WYOMING        |
| TOTAL          |                    | 1,035,485,474  | 186,159,875                               | 849,325,598  | 11,955,782                                | 42,468,395                                | 259,134,320   | 234,163,895  | 12,511,916                                    | 121,483,599  | 80,798,355   | 86,709,904  | TOTAL          |

REMARK: ABOVE FUNDS GENERALLY APPLICABLE TO STATE HIGHWAY FINANCING

- 1/ APPROPRIATION FOR STATE HIGHWAY BOND INTEREST AND RETIREMENTS.
- 2/ TAX LEVY FOR BOND PAYMENTS.
- 3/ COUNTY BOND SALE PROCEEDS FOR USE ON STATE HIGHWAYS.
- 4/ DATA FOR 9 MONTHS ONLY, JULY 1 TO MAR. 31, AS FISCAL YEAR WAS CHANGED.
- 5/ INCLUDES \$35,409 FROM U.S. GOVERNMENT OIL ROYALTIES.
- 6/ INCLUDES \$5,485,400 FOR COUNTIES AND TOWNS.
- 7/ LOAN SURPLUS BALANCE SHOWN IN 1927 UNEXPENDED BALANCE, EXCLUDED HERE.
- 8/ INCLUDES \$418,944 FROM U.S. GOVERNMENT OIL ROYALTIES.



STATE HIGHWAY AND BRIDGE WORK UNDER SUPERVISION OF STATE HIGHWAY DEPARTMENTS  
INCLUDING PRINCIPAL PAYMENTS ON BONDS AND NOTES, AND TRANSFERS TO LOCAL AUTHORITIES  
(COMPILED FROM REPORTS OF STATE AUTHORITIES)F-2 (1928)  
R.S.A.

| STATE          | FISCAL YEAR ENDS | GRAND TOTAL OMBURSEMENT BY STATE HIGHWAY DEPARTMENT | EXPENDITURE FOR STATE HIGHWAY PURPOSES |                               |             |                        |                         | OTHER OMBURSEMENTS BY STATE HIGHWAY DEPARTMENT |                                      |   |                                      | STATE          |
|----------------|------------------|---|--|-------------------------------|-------------|------------------------|-------------------------|--|--------------------------------------|---|--------------------------------------|----------------|
|                |                  |   | TOTAL EXPENDITURE FOR STATE HIGHWAYS   | CONSTRUCTION AND RIGHT-OF-WAY | MAINTENANCE | MISCELLANEOUS EXPENSES | EQUIPMENT AND MACHINERY | INTEREST ON BONDS AND NOTES OUTSTANDING        | PRINCIPAL PAYMENT ON BONDS AND NOTES | TRANSFERS TO COUNTY OR TOWN FOR LOCAL ROADS | UNEXPENDED AT THE END OF FISCAL YEAR |                |
| ALABAMA        | 9/30             | \$20,110,222  | \$19,291,159                           | \$15,081,550                  | \$759,383   | \$39,154               | \$2,153,708             | \$1,257,354                                    | \$819,053                            | -   | \$912,521                            | ALABAMA        |
| ARIZONA        | 6/30             | 2,442,934   | 1,001,307                              | 1,001,307                     | 868,197     | 253,967                | 243,463                 | -  | -                                    | -   | 755,577                              | ARIZONA        |
| ARKANSAS       | 12/31            | 31,783,916  | 23,812,065                             | 20,267,434                    | 2,173,434   | 355,346                | 255,477                 | 851,250  | 6,503,614                            | \$1,468,237                                 | 4,559,949                            | ARKANSAS       |
| CALIFORNIA     | 12/31            | 24,964,977  | 23,189,977                             | 14,507,666                    | 5,127,537   | -                      | 565,673                 | 2/2,999,102                                    | 2/1,775,000                          | -   | 13,570,137                           | CALIFORNIA     |
| COLORADO       | 11/30            | 6,957,124   | 6,367,124                              | 4,443,369                     | 949,393     | 6,754                  | 615,886                 | 441,122  | 600,000                              | -   | 1,518,886                            | COLORADO       |
| CONNECTICUT    | 6/30             | 15,197,356  | 13,197,356                             | 10,089,516                    | 3,869,705   | 95,690                 | 3/ -                    | -  | -                                    | -   | 6,574,366                            | CONNECTICUT    |
| DELAWARE       | 12/31            | 14,312,464  | 13,089,516                             | 11,686,556                    | 236,475     | 185,420                | 225,642                 | 4/ 841,663                                     | 288,260                              | -   | 234,603                              | DELAWARE       |
| FLORIDA        | 12/31            | 14,342,749  | 14,342,749                             | 12,427,815                    | 1,536,023   | 131,269                | -                       | -  | -                                    | -   | 343,497                              | FLORIDA        |
| GEORGIA        | 12/31            | 12,728,478  | 12,728,478                             | 10,863,916                    | 1,284,720   | 13,807                 | 566,055                 | 137,822  | 139,600                              | -   | 440,871                              | GEORGIA        |
| IDAHO          | 12/31            | 5,412,824   | 6,273,324                              | 4,095,674                     | 796,017     | 155,841                | 87,770                  | 137,822  | -                                    | -   | 34,550                               | IDAHO          |
| ILLINOIS       | 12/31            | 63,471,582  | 61,472,582                             | 44,278,615                    | 2,409,341   | 428,025                | 206,585                 | 4,150,016                                      | 1,999,000                            | -   | 3,926,145                            | ILLINOIS       |
| INDIANA        | 9/30             | 16,643,882  | 16,643,882                             | 12,495,075                    | 3,217,990   | -                      | 830,817                 | -  | -                                    | -   | 1,944,432                            | INDIANA        |
| IOWA           | 11/30            | 37,264,891  | 34,398,120                             | 29,508,760                    | 3,809,985   | 220,469                | -                       | 5/ 859,916                                     | 5/ 637,500                           | 2,219,271                                   | 6,384,946                            | IOWA           |
| KANSAS         | 12/31            | 13,903,616  | 13,903,616                             | 10,960,772                    | 2,384,522   | 558,322                | 558,322                 | -  | -                                    | -   | 105,422                              | KANSAS         |
| KENTUCKY       | 6/30             | 14,765,592  | 14,260,588                             | 12,207,460                    | 1,515,381   | 16,326                 | 384,374                 | 137,047  | 505,004                              | -   | 105,422                              | KENTUCKY       |
| LOUISIANA      | 12/31            | 11,195,551  | 10,685,808                             | 7,137,584                     | 2,505,852   | 269,858                | 669,574                 | 124,000  | 457,311                              | -   | 1,596,903                            | LOUISIANA      |
| MAINE          | 12/31            | 11,062,237  | 10,571,237                             | 7,453,482                     | 1,702,586   | 245,277                | 506,317                 | 553,566  | 481,000                              | -   | 1,314,142                            | MAINE          |
| MARYLAND       | 9/30             | 10,568,297  | 10,659,297                             | 5,698,076                     | 4,859,748   | 119,133                | 144,756                 | 924,529  | -                                    | 2,677,308                                   | 1,877,614                            | MARYLAND       |
| MASSACHUSETTS  | 12/31            | 16,477,614  | 13,800,305                             | 10,744,203                    | 1,906,616   | 80,196                 | 443,634                 | 2,248,637                                      | 2,666,844                            | 9,812,734                                   | 1,032,149                            | MASSACHUSETTS  |
| MICHIGAN       | 6/30             | 36,577,754  | 24,098,176                             | 15,232,315                    | 5,518,937   | 654,553                | -                       | -  | -                                    | -   | 4,376,528                            | MICHIGAN       |
| MINNESOTA      | 12/31            | 18,411,393  | 18,251,107                             | 11,052,839                    | 4,724,172   | -                      | 879,581                 | 1,594,455                                      | 160,886                              | -   | 11,252,149                           | MINNESOTA      |
| MISSISSIPPI    | 1/31             | 6,281,170   | 3,395,154                              | 3,395,154                     | 2,547,641   | 127,140                | 211,235                 | 2,112,502                                      | 1,000,000                            | -   | 1,020,348                            | MISSISSIPPI    |
| MISSOURI       | 12/31            | 18,981,065  | 17,981,065                             | 12,693,190                    | 2,571,695   | 132,626                | 471,254                 | -  | -                                    | -   | 4,358,501                            | MISSOURI       |
| MONTANA        | 6/30             | 3,863,324   | 3,863,324                              | 3,327,570                     | 410,485     | -                      | 125,269                 | -  | -                                    | -   | 219,090                              | MONTANA        |
| NEBRASKA       | 12/31            | 6,984,161   | 6,984,161                              | 4,970,623                     | 1,906,167   | -                      | 107,161                 | -  | -                                    | -   | 400,000                              | NEBRASKA       |
| NEVADA         | 11/30            | 2,167,329   | 2,067,329                              | 1,352,542                     | 390,146     | 52,008                 | 234,798                 | 27,835   | 100,000                              | -   | 24,019                               | NEVADA         |
| NEW HAMPSHIRE  | 12/31            | 5,552,959   | 5,469,432                              | 2,534,249                     | 2,609,064   | 54,882                 | 271,237                 | -  | 83,487                               | -   | 1,334,587                            | NEW HAMPSHIRE  |
| NEW JERSEY     | 12/31            | 32,479,196  | 31,700,305                             | 26,144,318                    | 5,125,783   | 22,035                 | 3,154                   | 405,016  | 718,891                              | 60,000                                      | 7,249,700                            | NEW JERSEY     |
| NEW MEXICO     | 12/31            | 5,603,106   | 5,946,026                              | 4,199,641                     | 1,082,842   | -                      | 565,234                 | 98,989   | 655,500                              | -   | 984,968                              | NEW MEXICO     |
| NEW YORK       | 12/31            | 62,503,413  | 56,618,013                             | 42,512,769                    | 9,878,290   | 26,964                 | -                       | 4,203,000                                      | 400,000                              | 6,495,400                                   | 44,321,260                           | NEW YORK       |
| NORTH CAROLINA | 6/30             | 20,301,350  | 14,579,012                             | 14,579,012                    | 4,505,948   | 868,646                | -                       | 4,720,848                                      | -                                    | 3,626,338                                   | 17,991,561                           | NORTH CAROLINA |
| NORTH DAKOTA   | 12/31            | 3,564,110   | 3,564,110                              | 2,680,155                     | 748,934     | 38,441                 | 96,580                  | -  | -                                    | -   | 211,305                              | NORTH DAKOTA   |
| OHIO           | 12/31            | 33,953,211  | 33,953,211                             | 21,216,768                    | 11,624,672  | 890,705                | 222,066                 | -  | -                                    | -   | 3,311,106                            | OHIO           |
| OKLAHOMA       | 12/31            | 13,250,526  | 13,250,526                             | 10,205,627                    | 2,779,988   | 241,601                | 22,310                  | -  | -                                    | -   | 237,832                              | OKLAHOMA       |
| OREGON         | 11/30            | 10,268,246  | 8,618,245                              | 3,421,039                     | 3,323,086   | 188,049                | 3/ -                    | 1,586,061                                      | 1,750,000                            | -   | 769,268                              | OREGON         |
| PENNSYLVANIA   | 12/31            | 56,615,590  | 51,850,356                             | 22,075,765                    | 17,570,406  | 9/3,733,207            | 4,179,578               | 4,291,400                                      | 2,746,627                            | 2,019,607                                   | 21,788,857                           | PENNSYLVANIA   |
| RHODE ISLAND   | 11/30            | 4,548,137   | 4,453,686                              | 2,111,488                     | 1,817,698   | 56,748                 | 281,731                 | 186,020  | 64,053                               | 30,399                                      | 3,176,279                            | RHODE ISLAND   |
| SOUTH CAROLINA | 12/31            | 21,038,868  | 18,975,851                             | 16,284,047                    | 2,151,658   | 568                    | 539,678                 | -  | -                                    | 2,123,017                                   | 6,701,484                            | SOUTH CAROLINA |
| SOUTH DAKOTA   | 12/31            | 5,492,738   | 5,652,738                              | 3,551,334                     | 1,972,470   | 357,314                | 1,972,470               | 4,100  | -                                    | -   | 107,830                              | SOUTH DAKOTA   |
| TENNESSEE      | 6/30             | 19,171,577  | 19,171,577                             | 12,615,005                    | 4,699,109   | 97,779                 | 1,198,114               | 161,570  | -                                    | -   | 5,666,194                            | TENNESSEE      |
| TEXAS          | 8/31             | 28,710,177  | 28,710,177                             | 14,433,793                    | 12,327,195  | 358,919                | 1,580,280               | -  | -                                    | -   | 10,580,121                           | TEXAS          |
| UTAH           | 12/31            | 3,932,354   | 3,579,854                              | 2,081,638                     | 814,991     | 100,300                | 927,126                 | 325,000  | 412,500                              | -   | 4,243,258                            | UTAH           |
| VERMONT        | 6/30             | 5,761,972   | 5,761,972                              | 3,913,016                     | 1,525,478   | 323,478                | -                       | 157,945  | -                                    | 210,000                                     | 1,952,366                            | VERMONT        |
| VIRGINIA       | 6/30             | 14,448,466  | 14,238,466                             | 10,487,498                    | 3,513,706   | 79,417                 | -                       | -  | -                                    | -   | -                                    | VIRGINIA       |
| WASHINGTON     | 12/31            | 13,823,176  | 11,833,500                             | 8,952,661                     | 2,886,481   | -                      | 134,358                 | -  | -                                    | 2,053,675                                   | -                                    | WASHINGTON     |
| WEST VIRGINIA  | 12/31            | 16,223,856  | 13,566,758                             | 7,539,298                     | 2,995,652   | 507,297                | 388,473                 | 2,136,038                                      | 2,640,000                            | 17,098                                      | 2,444,458                            | WEST VIRGINIA  |
| WISCONSIN      | 6/30             | 20,016,758  | 16,541,466                             | 12,637,159                    | 3,742,314   | 143,470                | 18,523                  | -  | -                                    | 3,475,332                                   | 6,237,348                            | WISCONSIN      |
| WYOMING        | 12/31            | 3,599,947   | 3,599,947                              | 2,516,562                     | 979,107     | -                      | 9,953                   | 94,325   | -                                    | -   | 488,942                              | WYOMING        |
| TOTALS         |                  | 827,649,983   | 784,646,134                            | 536,234,303                   | 158,879,573 | 11,332,741             | 20,505,483              | 37,637,034                                     | 27,016,493                           | 35,885,350                                  | 205,221,665                          | TOTALS         |

1/ INCLUDES PRO RATA SHARE OF ADMINISTRATION, ENGINEERING, MATERIALS AND SUPPLIES.

2/ INTEREST AND RETIREMENT PAYMENTS ON BONDS, NOT THROUGH STATE HIGHWAY DEPARTMENT.

3/ EQUIPMENT AND MACHINERY EXPENDITURES INCLUDED IN MAINTENANCE.

4/ EQUIPMENT ON COUNTY BONDS, EXCLUDED FROM STATE INCOME.

5/ COUNTY BOND INTEREST AND RETIREMENTS EXCLUDED.

6/ DATA FOR 9 MONTHS ONLY: JULY 1 TO MARCH 31, AS FISCAL YEAR WAS CHANGED.

7/ EXCLUDES OMBURSEMENTS OF \$1,065,422 IN OILIES UNDER SUPERVISION OF STATE HIGHWAY DEPARTMENT.

8/ INCLUDES \$324,049 OF MAINTENANCE RECONSTRUCTION.

9/ EXCLUDES \$1,649,504 FOR REGISTRATION OF MOTOR VEHICLES.





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MILE OF COUNTY AND OTHER LOCAL RURAL ROADS  
BUILT TO GRADE, AND MILES SURFACED DURING 1927M-2 (1927)  
R-8-A.

(FROM RECORDS AND REPORTS OF COUNTY AUTHORITIES)

(ROADS NOT ON STATE HIGHWAY SYSTEMS)

| STATES         | TOTAL<br>MILES<br>GRADED, &<br>MILES<br>SURFACED | EARTH<br>IMPROVED,<br>GRADED &<br>ORAINED | TOTAL<br>MILES<br>OF ROAD<br>SURFACED | SAND-CLAY<br>AND<br>TOP-SOIL | GRAVEL,<br>ETC.,<br>TREATED<br>AND<br>UNTREATED | WATERBOUND,<br>MACADAM,<br>TREATED<br>AND<br>UNTREATED | BITUMINOUS<br>BY<br>PENETRATION | SHEET<br>ASPHALT | BITUMINOUS<br>CONCRETE | PORTLAND<br>CEMENT<br>CONCRETE | VITRIFIED<br>BRICK | BLOCK,<br>ASPHALT,<br>WOOD,<br>STONE | STATES         |
|----------------|--|---|---------------------------------------|------------------------------|---|--|---------------------------------|------------------|------------------------|--------------------------------|--------------------|--------------------------------------|----------------|
| ALABAMA        | 719.3  | 168.0                                     | 680.3                                 | 269.4                        | 240.8   | 19.0   | 6.6                             | -                | 13.1                   | 11.6                           | 1.0                | -                                    | ALABAMA        |
| ARIZONA        | 169.6  | 99.0                                      | 70.6                                  | -                            | 70.6  | -  | -                               | -                | -                      | -                              | -                  | -                                    | ARIZONA        |
| ARKANSAS       | 215.0  | 200.0                                     | 15.0                                  | -                            | 15.0  | -  | -                               | -                | -                      | -                              | -                  | -                                    | ARKANSAS       |
| CALIFORNIA     | 5,456.0  | 1,666.0                                   | 3,890.0                               | 500.0                        | 2,912.0   | 44.0   | 177.0                           | -                | 104.0                  | 153.0                          | -                  | -                                    | CALIFORNIA     |
| COLORADO       | 623.0  | 219.0                                     | 219.0                                 | 7.0                          | 612.0   | -  | -                               | -                | -                      | -                              | -                  | -                                    | COLORADO       |
| CONNECTICUT    | 26.0   | 404.0                                     | 26.0                                  | -                            | 14.1  | 1.0  | 6.0                             | 0.5              | -                      | 3.9                            | 0.5                | -                                    | CONNECTICUT    |
| DELAWARE       | 13.0   | -   | -                                     | -                            | 4.0   | 4.2  | 0.3                             | -                | -                      | 0.5                            | -                  | -                                    | DELAWARE       |
| FLORIDA        | 1,952.3  | 841.7                                     | 1,110.6                               | 59.6                         | 19.0  | 959.0  | 15.4                            | 26.7             | 1.5                    | -                              | 24.5               | 8.0 (ASPHALT)                        | FLORIDA        |
| GEORGIA        | 1,622.1  | 724.9                                     | 897.2                                 | 788.3                        | 0.7   | -  | -                               | -                | -                      | 48.4                           | -                  | -                                    | GEORGIA        |
| IDAHO          | 1,141.0  | 597.0                                     | 544.0                                 | 84.0                         | 458.0   | -  | -                               | -                | 2.0                    | 92.8                           | 0.5                | -                                    | IDAHO          |
| ILLINOIS       | 765.9  | 44.0                                      | 711.9                                 | -                            | 605.4   | 11.0   | 2.2                             | -                | -                      | -                              | -                  | -                                    | ILLINOIS       |
| INDIANA        | 812.7  | -   | 812.7                                 | -                            | 681.1   | 49.9   | 25.5                            | 2.9              | 3.2                    | 147.8                          | 2.3                | -                                    | INDIANA        |
| IOWA           | 2,497.7  | 633.0                                     | 1,864.7                               | -                            | 1,860.8   | -  | -                               | -                | -                      | 3.9                            | -                  | -                                    | IOWA           |
| KANSAS         | 1,097.1  | 678.0                                     | 619.1                                 | 239.2                        | 255.9   | 10.8   | 10.0                            | 1.0              | -                      | 2.2                            | -                  | -                                    | KANSAS         |
| KENTUCKY       | 624.3  | 101.6                                     | 522.8                                 | 4.3                          | 240.5   | 271.1  | 6.1                             | -                | -                      | 0.8                            | -                  | -                                    | KENTUCKY       |
| LOUISIANA      | 1,302.3  | 607.5                                     | 694.8                                 | 6.4                          | 683.3   | 3.4  | -                               | -                | 1.7                    | -                              | -                  | -                                    | LOUISIANA      |
| MAINE          | 363.6  | 0.9                                       | 362.6                                 | -                            | 361.4   | -  | 0.6                             | -                | -                      | 0.7                            | -                  | -                                    | MAINE          |
| MARYLAND       | 262.8  | 60.0                                      | 202.8                                 | -                            | 136.5   | 49.8   | 1.0                             | 2.8              | -                      | 12.7                           | -                  | -                                    | MARYLAND       |
| MASSACHUSETTS  | 314.4  | 100.0                                     | 214.4                                 | 11.4                         | 140.8   | 5.3  | 40.1                            | -                | 16.8                   | -                              | -                  | -                                    | MASSACHUSETTS  |
| MICHIGAN       | 1,156.5  | 74.8                                      | 1,081.7                               | -                            | 814.4   | 76.5   | 21.3                            | -                | 8.5                    | 166.0                          | -                  | -                                    | MICHIGAN       |
| MINNESOTA      | 4,697.3  | 1,260.1                                   | 3,437.2                               | 655.4                        | 2,774.9   | -  | -                               | -                | 1.8                    | 5.1                            | -                  | -                                    | MINNESOTA      |
| MISSISSIPPI    | 1,147.4  | 136.9                                     | 1,010.5                               | -                            | 1,010.5   | -  | -                               | -                | -                      | -                              | -                  | -                                    | MISSISSIPPI    |
| MISSOURI       | 542.5  | 363.0                                     | 189.5                                 | -                            | 160.0   | 21.2   | 5.0                             | -                | -                      | 3.3                            | -                  | -                                    | MISSOURI       |
| MONTANA        | 144.8  | -   | 144.8                                 | -                            | 143.8   | -  | -                               | -                | -                      | -                              | -                  | -                                    | MONTANA        |
| NEBRASKA       | 1,786.5  | 1,500.0                                   | 286.6                                 | 165.5                        | 117.0   | -  | 1.6                             | -                | -                      | 2.6                            | -                  | -                                    | NEBRASKA       |
| NEVADA         | 101.5  | 58.5                                      | 43.0                                  | 13.0                         | 30.0  | -  | -                               | -                | -                      | -                              | -                  | -                                    | NEVADA         |
| NEW HAMPSHIRE  | 26.9   | 2.0                                       | 24.9                                  | -                            | 23.6  | 0.6  | 0.2                             | -                | 0.6                    | -                              | -                  | -                                    | NEW HAMPSHIRE  |
| NEW JERSEY     | 414.9  | -   | 414.9                                 | -                            | 132.8   | 39.3   | 95.3                            | 29.8             | 17.9                   | 97.2                           | -                  | 2.6 (STONE)                          | NEW JERSEY     |
| NEW MEXICO     | 207.6  | 125.5                                     | 82.1                                  | -                            | 82.1  | -  | -                               | -                | -                      | -                              | -                  | -                                    | NEW MEXICO     |
| NEW YORK       | 1,441.2  | -   | 1,441.2                               | -                            | 396.2   | 273.7  | 685.8                           | -                | -                      | 146.5                          | -                  | -                                    | NEW YORK       |
| NORTH CAROLINA | 1,520.0  | 576.0                                     | 944.0                                 | 644.0                        | 186.0   | 29.0   | 40.0                            | -                | 11.0                   | 34.0                           | -                  | -                                    | NORTH CAROLINA |
| NORTH DAKOTA   | 79.8   | -   | 79.8                                  | -                            | 79.8  | -  | -                               | -                | -                      | -                              | -                  | -                                    | NORTH DAKOTA   |
| OHIO           | 3,112.0  | 921.0                                     | 2,191.0                               | -                            | 1,639.0   | 269.0  | 192.0                           | 3.0              | 1.0                    | 69.0                           | 19.0               | -                                    | OHIO           |
| OKLAHOMA       | 678.0  | 550.0                                     | 128.0                                 | -                            | 180.0   | -  | -                               | -                | -                      | 8.0                            | -                  | -                                    | OKLAHOMA       |
| OREGON         | 188.0  | 94.8                                      | 93.4                                  | -                            | 79.2  | -  | -                               | -                | -                      | 14.2                           | -                  | -                                    | OREGON         |
| PENNSYLVANIA   | 956.5  | 130.6                                     | 827.9                                 | -                            | 518.9   | 125.5  | 50.5                            | 3.1              | 70.1                   | 63.1                           | 6.7                | -                                    | PENNSYLVANIA   |
| RHODE ISLAND   | 48.1   | 38.7                                      | 34.4                                  | -                            | 14.8  | 13.1   | 6.6                             | -                | -                      | -                              | -                  | -                                    | RHODE ISLAND   |
| SOUTH CAROLINA | 704.8  | 13.1                                      | 666.7                                 | 651.1                        | 5.3   | 7.0  | -                               | 0.3              | -                      | -                              | -                  | 3/ 3.0 (STONE)                       | SOUTH CAROLINA |
| SOUTH DAKOTA   | 5,260.6  | 4,950.8                                   | 269.8                                 | -                            | 269.8   | -  | -                               | -                | -                      | -                              | -                  | -                                    | SOUTH DAKOTA   |
| TENNESSEE      | 1,754.0  | 794.8                                     | 959.2                                 | -                            | 469.9   | 473.4  | 12.0                            | 1.1              | 1.0                    | 1.8                            | -                  | -                                    | TENNESSEE      |
| TEXAS          | 1,065.0  | 615.0                                     | 440.0                                 | -                            | 426.0   | -  | -                               | -                | -                      | 15.0                           | -                  | -                                    | TEXAS          |
| UTAH           | 203.3  | -   | 203.3                                 | -                            | 203.3   | -  | -                               | -                | -                      | -                              | -                  | -                                    | UTAH           |
| VERMONT        | 150.0  | 50.0                                      | 100.0                                 | -                            | 100.0   | -  | -                               | -                | -                      | -                              | -                  | -                                    | VERMONT        |
| VIRGINIA       | 715.0  | 210.0                                     | 505.0                                 | 170.0                        | 125.0   | 130.0  | 60.0                            | -                | -                      | 20.0                           | -                  | -                                    | VIRGINIA       |
| WASHINGTON     | 3,154.8  | 2,449.1                                   | 705.7                                 | 108.6                        | 550.0   | -  | 0.2                             | -                | -                      | 46.9                           | -                  | -                                    | WASHINGTON     |
| WEST VIRGINIA  | 433.7  | 235.7                                     | 198.0                                 | -                            | 80.8  | 49.9   | 30.3                            | -                | 2.6                    | 34.0                           | 0.4                | -                                    | WEST VIRGINIA  |
| WISCONSIN      | 7,835.3  | 3,731.8                                   | 4,103.5                               | 656.2                        | 3,034.1   | 263.2  | -                               | -                | -                      | 150.0                          | -                  | -                                    | WISCONSIN      |
| WYOMING        | 255.9  | 242.7                                     | 13.2                                  | -                            | 13.2  | -  | -                               | -                | -                      | -                              | -                  | -                                    | WYOMING        |
| TOTALS         | 59,732.0   | 25,880.2                                  | 33,851.8                              | 5,024.3                      | 22,399.3  | 3,196.9  | 1,476.8                         | 84.5             | 258.7                  | 1,343.8                        | 54.9               | 13.6                                 | TOTALS         |

NOTES: 1/ READY FOR SURFACING

2/ INCLUDED NEW ORIGINAL SURFACING AND RECONSTRUCTED SURFACING

3/ STONE BLOCK SURFACED WITH 1-1/2" OF BITUMINOUS MACADAM





UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF PUBLIC ROADS

(FROM RECORDS AND REPORTS OF COUNTY AUTHORITIES)

(LOCAL ROADS INCLUDE COUNTY AND TOWNSHIP ROADS, AND EXCLUDE STATE HIGHWAYS)

| STATES         | TOTAL<br>LOCAL<br>MILEAGE | EARTH ROADS-<br>TOTAL NON-<br>SURFACED<br>LOCAL<br>MILEAGE | TOTAL<br>SURFACED<br>LOCAL<br>MILEAGE | SAND-CLAY<br>AND<br>TOP-SOIL | TREATED & UNTREATED<br>GRAVEL, WATERBOUND<br>MACADAM,<br>ETC. | BUTUMINOUS<br>MACADAM,<br>BY<br>PENETRATION | SHEET<br>ASPHALT | BITUMINOUS<br>CONCRETE | PORTLAND<br>CEMENT<br>CONCRETE | BLOCK PAVEMENTS    |         |      |       | STATES         |
|----------------|---------------------------|--|---------------------------------------|------------------------------|---|---|------------------|------------------------|--------------------------------|--------------------|---------|------|-------|----------------|
|                |                           |  |                                       |                              |   |   |                  |                        |                                | VITRIFIED<br>BRICK | ASPHALT | WOOD | STONE |                |
| ALABAMA        | 59,787                    | 43,887   | 15,900                                | 8,292                        | 7,111   | 259   | 44               | 47                     | 70                             | 5                  | -       | -    | -     | ALABAMA        |
| ARIZONA        | 19,625                    | 17,941   | 1,684                                 | 1,079                        | 25  | -   | -                | 13                     | 263                            | -                  | -       | -    | -     | ARIZONA        |
| ARKANSAS       | 66,039                    | 64,196   | 1,843                                 | 210                          | 1,574   | 46  | 7                | -                      | 6                              | -                  | -       | -    | -     | ARKANSAS       |
| CALIFORNIA     | 78,607                    | 58,607   | 19,976                                | 1,607                        | 11,932  | 1,114                                       | 2,152            | 1,044                  | 2,058                          | -                  | -       | -    | -     | CALIFORNIA     |
| COLORADO       | 59,184                    | 56,671   | 2,513                                 | 1,315                        | 1,292   | -   | -                | 2                      | 4                              | -                  | -       | -    | -     | COLORADO       |
| CONNECTICUT    | 12,021                    | 10,493   | 1,528                                 | -                            | 986   | 378   | 74               | -                      | 83                             | -                  | -       | -    | -     | CONNECTICUT    |
| DELAWARE       | 3,167                     | 2,869  | 298                                   | -                            | 79  | 160   | 21               | 30                     | 7                              | 1                  | -       | -    | -     | DELAWARE       |
| FLORIDA        | 23,244                    | 12,727   | 10,517                                | 3,417                        | 998   | 4,652                                       | 175              | 636                    | 78                             | 248                | 265     | -    | -     | FLORIDA        |
| GEORGIA        | 92,082                    | 82,672   | 9,410                                 | 7,692                        | 1,299   | 73  | 228              | 38                     | 188                            | 2                  | -       | -    | -     | GEORGIA        |
| IDAHO          | 33,130                    | 27,349   | 5,781                                 | 2,112                        | 3,668   | 4   | 71               | 41                     | 5                              | -                  | -       | -    | -     | IDAHO          |
| ILLINOIS       | 87,730                    | 74,681   | 13,049                                | 11,296                       | 439   | 78  | 23               | 18                     | 1,185                          | 117                | -       | -    | -     | ILLINOIS       |
| INDIANA        | 59,245                    | 23,310   | 45,935                                | -                            | 42,675  | 1,623                                       | 237              | 177                    | 1,093                          | 154                | -       | -    | -     | INDIANA        |
| IOWA           | 96,586                    | 89,197   | 7,389                                 | 7,363                        | -   | -   | -                | -                      | 6                              | -                  | -       | -    | -     | IOWA           |
| KANSAS         | 121,384                   | 119,698  | 1,686                                 | 680                          | 887   | 76  | 35               | 1                      | 39                             | 2                  | -       | -    | -     | KANSAS         |
| KENTUCKY       | 51,614                    | 40,581   | 11,033                                | 159                          | 3,966   | 6,888                                       | 55               | 6                      | 20                             | -                  | -       | -    | -     | KENTUCKY       |
| LOUISIANA      | 25,141                    | 16,877   | 4,264                                 | 22                           | 4,264   | 13  | 5                | 5                      | 1                              | -                  | -       | -    | -     | LOUISIANA      |
| MAINE          | 19,214                    | 16,877   | 3,337                                 | 9                            | 3,298   | 13  | 14               | -                      | -                              | -                  | -       | -    | -     | MAINE          |
| MARYLAND       | 12,192                    | 9,404  | 2,788                                 | 143                          | 1,647   | 896   | 7                | 4                      | 91                             | -                  | -       | -    | -     | MARYLAND       |
| MASSACHUSETTS  | 17,768                    | 10,838   | 6,920                                 | 19                           | 4,362   | 375   | 1,077            | 409                    | 61                             | 5                  | -       | 2    | 10    | MASSACHUSETTS  |
| MICHIGAN       | 73,872                    | 67,487   | 16,385                                | 19                           | 13,758  | 1,312                                       | 139              | 7                      | 1,076                          | 5                  | -       | -    | -     | MICHIGAN       |
| MINNESOTA      | 103,313                   | 77,468   | 26,866                                | 5,578                        | 20,084  | 72  | -                | 11                     | 98                             | -                  | -       | -    | -     | MINNESOTA      |
| MISSISSIPPI    | 50,052                    | 41,594   | 8,458                                 | 204                          | 8,010   | 32  | 50               | 7                      | 79                             | 5                  | -       | -    | -     | MISSISSIPPI    |
| MISSOURI       | 103,066                   | 95,239   | 7,825                                 | 1,462                        | 4,955   | 1,210                                       | 92               | 61                     | 56                             | -                  | -       | -    | -     | MISSOURI       |
| MONTANA        | 58,924                    | 67,200   | 1,724                                 | 120                          | 1,600   | 2   | 2                | -                      | 24                             | 3                  | -       | -    | -     | MONTANA        |
| NEBRASKA       | 87,736                    | 87,037   | 639                                   | 196                          | 401   | 4   | 2                | 9                      | -                              | -                  | -       | -    | -     | NEBRASKA       |
| NEVADA         | 20,107                    | 19,630   | 477                                   | 16                           | 461   | -   | -                | -                      | -                              | -                  | -       | -    | -     | NEVADA         |
| NEW HAMPSHIRE  | 9,715                     | 9,394  | 321                                   | 23                           | 265   | 22  | 10               | 1                      | -                              | -                  | -       | -    | -     | NEW HAMPSHIRE  |
| NEW JERSEY     | 14,856                    | 8,468  | 6,388                                 | 74                           | 3,446   | 1,022                                       | 398              | 465                    | 576                            | 4                  | 6       | 1    | 53    | NEW JERSEY     |
| NEW MEXICO     | 39,964                    | 39,613   | 351                                   | 86                           | 266   | -   | -                | -                      | -                              | -                  | -       | -    | -     | NEW MEXICO     |
| NORTH CAROLINA | 25,560                    | 46,283   | 19,277                                | 5,693                        | 7,084   | 7,084                                       | 4,668            | -                      | 842                            | -                  | -       | -    | -     | NORTH CAROLINA |
| NORTH DAKOTA   | 84,447                    | 42,862   | 21,585                                | 17,960                       | 2,730   | 260   | 260              | 30                     | 250                            | 25                 | -       | -    | -     | NORTH DAKOTA   |
| OHIO           | 99,609                    | 96,971   | 638                                   | 638                          | -   | -   | -                | -                      | -                              | -                  | -       | -    | -     | OHIO           |
| OKLAHOMA       | 73,753                    | 59,672   | 34,081                                | -                            | 25,012  | 6,926                                       | 2,145            | 49                     | 634                            | 268                | -       | -    | -     | OKLAHOMA       |
| OREGON         | 117,485                   | 116,019  | 1,466                                 | 219                          | 1,124   | 2   | 11               | 6                      | 96                             | -                  | -       | -    | -     | OREGON         |
| PENNSYLVANIA   | 47,285                    | 38,880   | 8,405                                 | 234                          | 6,594   | 1,050                                       | 9                | 362                    | 156                            | -                  | -       | -    | -     | PENNSYLVANIA   |
| RHODE ISLAND   | 79,074                    | 63,358   | 15,706                                | -                            | 11,878  | 1,955                                       | 518              | 430                    | 530                            | 417                | 3       | -    | 8     | RHODE ISLAND   |
| SOUTH CAROLINA | 1,671                     | 1,237  | 374                                   | -                            | 174   | 101   | 56               | 20                     | 12                             | -                  | -       | -    | 3     | SOUTH CAROLINA |
| SOUTH DAKOTA   | 50,537                    | 41,218   | 9,319                                 | 9,062                        | 189   | -   | -                | 46                     | -                              | -                  | -       | -    | -     | SOUTH DAKOTA   |
| TENNESSEE      | 114,250                   | 113,059  | 1,191                                 | -                            | 1,191   | 3,662                                       | 38               | 7                      | 64                             | -                  | -       | -    | -     | TENNESSEE      |
| TEXAS          | 159,836                   | 155,930  | 13,846                                | 2,634                        | 10,490  | 467   | 40               | 20                     | 169                            | -                  | -       | 1    | -     | TEXAS          |
| UTAH           | 19,980                    | 18,367   | 1,613                                 | 25                           | 1,614   | -   | 9                | 24                     | 19                             | -                  | -       | -    | -     | UTAH           |
| VERMONT        | 10,810                    | 9,363  | 1,447                                 | 143                          | 1,300   | -   | 1                | 3                      | -                              | -                  | -       | -    | -     | VERMONT        |
| VIRGINIA       | 52,890                    | 45,254   | 7,035                                 | 3,710                        | 1,691   | -   | 330              | -                      | 125                            | -                  | -       | -    | -     | VIRGINIA       |
| WASHINGTON     | 43,635                    | 29,550   | 13,985                                | 933                          | 10,348  | 1,654                                       | 44               | 124                    | 780                            | 42                 | -       | -    | -     | WASHINGTON     |
| WEST VIRGINIA  | 30,979                    | 29,476   | 1,503                                 | 601                          | 2,154   | 214   | 374              | 37                     | 222                            | 49                 | -       | -    | 2     | WEST VIRGINIA  |
| WISCONSIN      | 59,248                    | 52,108   | 17,145                                | 2,874                        | 13,175  | 739   | -                | -                      | 368                            | -                  | -       | -    | -     | WISCONSIN      |
| WYOMING        | 42,205                    | 41,877   | 328                                   | 97                           | 231   | -   | -                | -                      | -                              | -                  | -       | -    | -     | WYOMING        |
| TOTALS         | 2,720,231                 | 2,308,076  | 412,155                               | 71,770                       | 263,088   | 45,600                                      | 13,586           | 1,454                  | 3,680                          | 1,352              | 265     | 4    | 79    | TOTALS         |



M-1 (1928)  
R.G.A.

## STATE HIGHWAY SYSTEMS - MILEAGE BUILT DURING 1928

(COMPILED FROM REPORTS OF STATE AUTHORITIES)

| STATES<br>(YEAR ENDS<br>DECEMBER 31<br>EXCEPT AS<br>NOTED) | TOTAL<br>MILEAGE<br>GRADED<br>AND<br>SURFACED | EARTH<br>IMPROVED<br>GRADED<br>AND<br>DRAINED | NEW SURFACING PLACED |                      |                |   | SAND-CLAY<br>AND<br>TOP-SOIL | GRAVEL, ETC.<br>(TREATED AND<br>UNTREATED) |       | WATERBOUND<br>MACADAM<br>(TREATED AND<br>UNTREATED) |       | BITUMINOUS<br>BY<br>PENETRATION |       | SHEET<br>ASPHALT |       | BITUMINOUS<br>CONCRETE |       | PORTLAND<br>CEMENT<br>CONCRETE |       | VITRIFIED<br>BRICK |       | BLOCK-<br>ASPHALT,<br>WOOD,<br>STONE(S) | STATES         |       |
|--|---|---|----------------------|----------------------|----------------|---|------------------------------|--|-------|---|-------|---------------------------------|-------|------------------|-------|------------------------|-------|--------------------------------|-------|--------------------|-------|---|----------------|-------|
|  |   |   | TOTAL                | ON<br>EARTH<br>ROADS | ON WORN OUT    |   |                              | NEW  | RECON | NEW   | RECON | NEW                             | RECON | NEW              | RECON | NEW                    | RECON | NEW                            | RECON | NEW                | RECON |   |                |       |
|  |   |   |                      |                      | OTHER<br>TYPES | TYPE -<br>SAME<br>(RECON-<br>STRUCTION) |                              |  |       |   |       |                                 |       |                  |       |                        |       |                                |       |                    |       |   |                |       |
| ALABAMA  | 580   | 79  | 681                  | 407                  | 126            | 48                                      | 98                           | -  | 259   | 48  | 9     | -                               | 18    | -                | -     | -                      | 17    | -                              | 132   | -                  | -     | -                                       | ALABAMA        |       |
| ARIZONA  | 136   | 10  | 146                  | 100                  | 32             | 13                                      | 27                           | -  | 73    | 13  | -     | -                               | -     | -                | -     | -                      | 11    | -                              | 60    | -                  | -     | -                                       | ARIZONA        |       |
| ARKANSAS   | 1,673   | 93  | 1,766                | 700                  | 34             | 6                                       | -                            | -  | 594   | 202   | -     | 6                               | -     | -                | -     | -                      | -     | -                              | 67    | -                  | -     | -                                       | ARKANSAS       |       |
| CALIFORNIA   | 698   | 85  | 643                  | 249                  | 486            | 229                                     | -                            | -  | 259   | -   | -     | -                               | 19    | 1                | 49    | 1                      | 30    | 1                              | 60    | 24                 | -     | -                                       | CALIFORNIA     |       |
| COLORADO   | 146   | 8   | 138                  | 109                  | 28             | -                                       | 77                           | -  | -     | -   | -     | -                               | -     | -                | -     | -                      | -     | -                              | 81    | -                  | -     | -                                       | COLORADO       |       |
| CONNECTICUT  | 184   | -   | 184                  | 63                   | 110            | 81                                      | -                            | -  | 3     | 1   | 47    | 11                              | 31    | -                | -     | -                      | 11    | 3                              | 71    | 8                  | -     | -                                       | CONNECTICUT    |       |
| DELAWARE   | 61  | -   | 61                   | 69                   | 1              | 1                                       | -                            | -  | -     | -   | 147   | -                               | 8     | -                | 39    | -                      | -     | -                              | 41    | -                  | -     | -                                       | DELAWARE       |       |
| FLORIDA  | 670   | 382   | 248                  | 196                  | 62             | -                                       | 11                           | -  | -     | -   | -     | -                               | -     | -                | -     | -                      | 17    | -                              | 28    | -                  | -     | -                                       | FLORIDA        |       |
| GEORGIA  | 709   | 162   | 667                  | 432                  | 90             | 35                                      | 106                          | -  | 178   | 33  | 81    | 2                               | 45    | -                | 41    | -                      | 7     | -                              | 65    | -                  | -     | -                                       | GEORGIA        |       |
| IDAH0  | 701   | 90  | 811                  | 214                  | 33             | 364                                     | 2                            | -  | 235   | 364   | -     | -                               | 6     | -                | -     | -                      | -     | -                              | 6     | -                  | -     | -                                       | IDAH0          |       |
| ILLINOIS   | 1,344   | 274   | 1,070                | 1,068                | 2              | -                                       | -                            | -  | -     | -   | -     | -                               | -     | -                | -     | -                      | -     | -                              | 1,043 | -                  | 27    | -                                       | ILLINOIS       |       |
| INDIANA  | 569   | 245   | 414                  | 276                  | 78             | 61                                      | -                            | -  | 43    | 37  | -     | -                               | 76    | 24               | -     | -                      | -     | -                              | 235   | -                  | -     | -                                       | INDIANA        |       |
| IOWA   | 1,346   | 307   | 1,039                | 741                  | 287            | -                                       | -                            | -  | 298   | -   | -     | -                               | -     | -                | -     | -                      | -     | -                              | 740   | -                  | -     | -                                       | IOWA           |       |
| KANSAS   | 1,706   | 1,039   | 666                  | 746                  | 72             | 81                                      | 646                          | -  | 74    | -   | -     | -                               | 8     | -                | -     | -                      | -     | -                              | 94    | -                  | 26    | -                                       | KANSAS         |       |
| KENTUCKY   | 1,081   | 434   | 687                  | 464                  | 148            | 72                                      | 23                           | -  | 200   | 18  | 220   | 43                              | 99    | -                | -     | -                      | 6     | -                              | 59    | -                  | -     | -                                       | KENTUCKY       |       |
| LOUISIANA  | 988   | 46  | 242                  | 200                  | 19             | 23                                      | -                            | -  | 148   | 23  | -     | -                               | -     | -                | -     | -                      | -     | -                              | 14    | -                  | -     | -                                       | LOUISIANA      |       |
| MAINE  | 108   | -   | 108                  | 84                   | 11             | 13                                      | -                            | -  | 71    | 4   | -     | -                               | 12    | 3                | -     | -                      | -     | -                              | 12    | 6                  | -     | -                                       | MAINE          |       |
| MARYLAND   | 148   | -   | 149                  | 126                  | 37             | 16                                      | -                            | -  | 24    | -   | 6     | 7                               | -     | -                | 4     | -                      | 8     | 6                              | 95    | -                  | -     | -                                       | MARYLAND       |       |
| MASSACHUSETTS  | 148   | -   | 149                  | 25                   | 37             | 37                                      | -                            | -  | -     | 1   | 6     | -                               | 77    | 32               | -     | -                      | 13    | 4                              | 16    | -                  | -     | -                                       | MASSACHUSETTS  |       |
| MICHIGAN   | 763   | 85  | 678                  | 286                  | 178            | 214                                     | -                            | 46   | 91    | 87  | -     | -                               | 3     | -                | -     | -                      | 31    | 1                              | 339   | 48                 | -     | -                                       | MICHIGAN       |       |
| MINNESOTA  | 1,243   | 204   | 1,039                | 63                   | 261            | 726                                     | 3                            | -  | 208   | 726   | -     | -                               | -     | -                | -     | -                      | 7     | -                              | 96    | -                  | -     | -                                       | MINNESOTA      |       |
| MISSISSIPPI  | 366   | 123   | 243                  | 220                  | 21             | 2                                       | -                            | -  | 165   | 2   | -     | -                               | 1     | -                | 1     | -                      | -     | -                              | 84    | -                  | -     | -                                       | MISSISSIPPI    |       |
| MISSOURI   | 571   | 216   | 365                  | 365                  | -              | -                                       | -                            | -  | 216   | -   | -     | -                               | -     | -                | -     | -                      | -     | -                              | 140   | -                  | -     | -                                       | MISSOURI       |       |
| MONTANA  | 322   | 38  | 284                  | 280                  | -              | 4                                       | -                            | -  | 273   | -   | -     | -                               | -     | -                | -     | -                      | -     | -                              | 4     | -                  | -     | -                                       | MONTANA        |       |
| NEBRASKA   | 557   | 213   | 444                  | 438                  | 6              | -                                       | 22                           | -  | 421   | -   | -     | -                               | -     | -                | -     | -                      | -     | -                              | 1     | -                  | -     | -                                       | NEBRASKA       |       |
| NEVADA   | 218   | 8   | 211                  | 86                   | 106            | 18                                      | -                            | -  | 86    | 19  | -     | -                               | 107   | -                | -     | -                      | -     | -                              | 31    | -                  | -     | -                                       | NEVADA         |       |
| NEW HAMPSHIRE  | 148   | 2   | 148                  | 94                   | 42             | 10                                      | -                            | -  | 86    | 9   | 4     | -                               | 12    | 1                | -     | -                      | 3     | -                              | 76    | 8                  | -     | -                                       | NEW HAMPSHIRE  |       |
| NEW JERSEY   | 84  | 4   | 90                   | 22                   | 61             | 7                                       | -                            | -  | 2     | 1   | -     | -                               | 1     | -                | -     | -                      | -     | -                              | -     | -                  | -     | -                                       | NEW JERSEY     |       |
| NEW MEXICO   | 1,062   | 798   | 264                  | 217                  | -              | 47                                      | -                            | -  | 216   | 46  | -     | -                               | -     | -                | -     | -                      | -     | -                              | 1     | -                  | -     | -                                       | NEW MEXICO     |       |
| NEW YORK   | 743   | 38  | 706                  | 351                  | 304            | 50                                      | -                            | -  | 22    | -   | 1     | -                               | 42    | 11               | -     | -                      | 40    | -                              | 661   | 38                 | -     | -                                       | NEW YORK       |       |
| NORTH CAROLINA   | 463   | -   | 463                  | 351                  | 447            | 6                                       | -                            | -  | 60    | -   | -     | -                               | 90    | -                | -     | -                      | -     | -                              | 297   | -                  | -     | -                                       | NORTH CAROLINA |       |
| NORTH DAKOTA   | 1,230   | 668   | 871                  | 518                  | -              | 163                                     | -                            | -  | 618   | 163   | -     | -                               | -     | -                | -     | -                      | -     | -                              | -     | -                  | -     | -                                       | NORTH DAKOTA   |       |
| OHIO   | 928   | 73  | 956                  | 791                  | -              | 64                                      | -                            | -  | 400   | 3   | 29    | 4                               | 79    | 39               | 7     | -                      | 1     | -                              | 219   | 18                 | 66    | -                                       | OHIO           |       |
| OKLAHOMA   | 598   | 396   | 202                  | 202                  | -              | -                                       | -                            | -  | -     | -   | -     | -                               | -     | -                | -     | -                      | -     | -                              | 118   | -                  | -     | -                                       | OKLAHOMA       |       |
| OREGON   | 333   | 70  | 263                  | 73                   | 104            | 86                                      | -                            | -  | 73    | 86  | 6     | 2                               | 104   | -                | -     | -                      | -     | -                              | 27    | 20                 | 1     | -                                       | OREGON         |       |
| PENNSYLVANIA   | 2   | 30  | 16                   | 16                   | 12             | 3                                       | -                            | -  | -     | 1   | -     | -                               | -     | -                | -     | -                      | -     | -                              | -     | -                  | -     | -                                       | PENNSYLVANIA   |       |
| RHODE ISLAND   | 49  | -   | 49                   | 32                   | 17             | 17                                      | -                            | 136  | -     | -   | 2     | -                               | 31    | -                | 3     | -                      | -     | -                              | 13    | -                  | -     | -                                       | RHODE ISLAND   |       |
| SOUTH CAROLINA   | 566   | 73  | 583                  | 206                  | 221            | 167                                     | -                            | 116  | 2     | 21  | -     | -                               | 6     | -                | 81    | -                      | 81    | -                              | 187   | -                  | -     | -                                       | SOUTH CAROLINA |       |
| SOUTH DAKOTA   | 812   | 280   | 632                  | 616                  | 16             | 16                                      | -                            | -  | 520   | -   | -     | -                               | -     | -                | -     | -                      | -     | -                              | 6     | -                  | -     | -                                       | SOUTH DAKOTA   |       |
| TENNESSEE  | 516   | 196   | 320                  | 240                  | 40             | 40                                      | -                            | -  | 74    | 6   | 116   | 34                              | 8     | -                | -     | -                      | -     | -                              | 82    | -                  | -     | -                                       | TENNESSEE      |       |
| TEXAS  | 2,356   | 648   | 1,708                | 1,478                | 230            | -                                       | -                            | -  | 408   | -   | -     | -                               | 878   | -                | -     | -                      | -     | -                              | 421   | -                  | 1     | -                                       | TEXAS          |       |
| UTAH   | 305   | 28  | 277                  | 220                  | 48             | 9                                       | -                            | -  | 219   | 9   | 39    | -                               | -     | -                | -     | -                      | -     | -                              | 10    | -                  | -     | -                                       | UTAH           |       |
| VERMONT  | 183   | -   | 183                  | 140                  | 36             | 7                                       | -                            | -  | 119   | 7   | -     | -                               | 5     | -                | -     | -                      | -     | -                              | 62    | -                  | -     | -                                       | VERMONT        |       |
| VIRGINIA   | 217   | 63  | 154                  | 154                  | -              | -                                       | 14                           | -  | 18    | -   | -     | -                               | 57    | -                | -     | -                      | -     | -                              | 65    | -                  | -     | -                                       | VIRGINIA       |       |
| WASHINGTON   | 239   | 102   | 137                  | 68                   | 18             | 51                                      | -                            | -  | 37    | 51  | -     | -                               | -     | -                | -     | -                      | -     | -                              | 49    | -                  | -     | -                                       | WASHINGTON     |       |
| WEST VIRGINIA  | 368   | 164   | 204                  | 186                  | 22             | 22                                      | -                            | -  | -     | -   | 43    | -                               | 49    | -                | -     | -                      | 3     | -                              | 44    | -                  | 3     | -                                       | WEST VIRGINIA  |       |
| WISCONSIN  | 830   | 31  | 799                  | 96                   | 182            | 631                                     | -                            | -  | 64    | 444   | 21    | 87                              | -     | -                | -     | -                      | -     | -                              | 183   | -                  | -     | -                                       | WISCONSIN      |       |
| WYOMING  | 586   | 278   | 308                  | 273                  | -              | 35                                      | -                            | -  | 273   | 35  | -     | -                               | -     | -                | -     | -                      | -     | -                              | -     | -                  | -     | -                                       | WYOMING        |       |
| TOTAL  | 29,262  | 8,676   | 20,677               | 13,843               | 3,587          | 3,147                                   | 1,919                        | 181  | 7,170 | 2,453   | 776   | 230                             | 1,868 | 111              | 220   | 6                      | 353   | 20                             | 5,908 | 147                | 113   | -                                       | 3              | TOTAL |

NOTES: 1/ MILEAGE OF NEW SURFACING PLACED AND RECONSTRUCTED SURFACES SHOWN SEPARATELY.  
2/ FOR 4 MONTHS ONLY, JANUARY 1 TO MAY 15, AS FISCAL YEAR CHANGED TO MAY 15.





M-4 (1928)

R-9-A.

(COMPILED FROM REPORTS OF STATE AUTHORITIES)

## STATE HIGHWAY SYSTEMS-EXISTING MILEAGE AT END OF 1928

| STATE          | 1928<br>YEAR<br>END | GRAND TOTAL<br>MILEAGE<br>STATE<br>HIGHWAY<br>SYSTEM | EARTH ROAD, NON-SURFACE             |  |  |                             |                              | SURFACE ROAD BY TYPE                                      |   |  |                  |                        |                                |                    |                   |                           |       | REVISIONS OF<br>SYSTEM<br>DURING YEAR<br>OF<br>SURVEY |                |  |
|----------------|---------------------|--|-------------------------------------|--|--|-----------------------------|------------------------------|---|---|--|------------------|------------------------|--------------------------------|--------------------|-------------------|---------------------------|-------|---|----------------|--|
|                |                     |  | TOTAL<br>NON-<br>SURFACE<br>MILEAGE | UNIMPROVED<br>AND<br>PARTLY<br>GRADED<br>ORAINED | IMPROVED<br>ESTABLISHED<br>AND<br>GRADED | TOTAL<br>SURFACE<br>MILEAGE | SAND-CLAY<br>AND<br>TOP-SOIL | GRAVEL<br>CHERT-SHALE<br>ETC.<br>(TREATED &<br>UNTREATED) | WATERBOUND<br>MACADAM<br>(TREATED &<br>UNTREATED) | BITUMINOUS<br>BY<br>MACADAM<br>PENETRATION | SHEET<br>ASPHALT | BITUMINOUS<br>CONCRETE | PORTLAND<br>CEMENT<br>CONCRETE | VITRIFIED<br>BRICK | BLANK<br>PAVEMENT | ASPHALT<br>WOOD-<br>STONE | STONE | STATE   |                |  |
| ALABAMA        | 9/30                | 5,590  | 2,850                               | 2,450  | 400                                      | 2,740                       | 800                          | 1,468   | 48  | 63   | 6                | 118                    | 239                            | -                  | -                 | -                         | -     | 1,671   | ALABAMA        |  |
| ARIZONA        | 12/31               | 2,213  | 627                                 | 335  | 291                                      | 1,586                       | 27                           | 1,359   | 189   | 15   | 15               | 51                     | 137                            | -                  | -                 | -                         | -     | 171   | ARIZONA        |  |
| ARKANSAS       | 12/31               | 8,718  | 3,802                               | 1,499  | 2,303                                    | 4,916                       | -                            | 4,072   | 189   | 147  | 32               | 238                    | 239                            | -                  | -                 | -                         | -     | 212   | ARKANSAS       |  |
| CALIFORNIA     | 12/31               | 6,572  | 2,645                               | 2,067  | 588                                      | 3,927                       | -                            | 3,151   | 31  | 325  | 397              | 138                    | 1,687                          | -                  | -                 | -                         | -     | 212   | CALIFORNIA     |  |
| COLORADO       | 12/31               | 9,120  | 4,965                               | 4,223  | 742                                      | 4,155                       | 82                           | 3,720   | -   | -  | -                | 13                     | 330                            | -                  | -                 | -                         | -     | 25  | COLORADO       |  |
| CONNECTICUT    | 6/30                | 2,013  | 1,906                               | -  | 107                                      | 1,906                       | -                            | 319   | 774   | 268  | -                | 152                    | 392                            | -                  | -                 | -                         | -     | 47  | CONNECTICUT    |  |
| DELAWARE       | 12/31               | 2,013  | 1,906                               | -  | 107                                      | 1,906                       | -                            | 319   | 774   | 268  | -                | 152                    | 392                            | -                  | -                 | -                         | -     | 47  | DELAWARE       |  |
| FLORIDA        | 12/31               | 8,418  | 3,186                               | 2,787  | 453                                      | 3,234                       | 715                          | 23  | 5   | 149  | 204              | 52                     | 232                            | -                  | -                 | -                         | -     | 75  | FLORIDA        |  |
| GEORGIA        | 12/31               | 6,853  | 2,477                               | 2,166  | 321                                      | 3,776                       | 4/ 1,844                     | 772   | 171   | 274  | 116              | 17                     | 581                            | -                  | -                 | -                         | -     | 127   | GEORGIA        |  |
| IDAH0          | 12/31               | 4,259  | 1,887                               | 1,419  | 468                                      | 2,372                       | 1,32                         | 2,126   | -   | 21   | 5                | 132                    | 56                             | -                  | -                 | -                         | -     | 40  | IDAH0          |  |
| ILLINOIS       | 12/31               | 9,889  | 3,637                               | 3,363  | 274                                      | 8,252                       | -                            | 1,969   | 2,398   | 428  | 10               | 7                      | 6,111                          | -                  | -                 | -                         | -     | 246   | ILLINOIS       |  |
| INDIANA        | 12/31               | 4,610  | 18                                  | -  | 18                                       | 4,592                       | -                            | 1,680   | 943   | 358  | -                | 32                     | 1,597                          | -                  | -                 | -                         | -     | -   | INDIANA        |  |
| IOWA           | 12/31               | 7,184  | 2,013                               | 899  | 1,114                                    | 5,171                       | -                            | 3,423   | -   | -  | -                | -                      | 1,716                          | -                  | -                 | -                         | -     | 106   | IOWA           |  |
| KANSAS         | 12/31               | 6,891  | 5,982                               | 4,042  | 1,920                                    | 2,729                       | 1,307                        | 433   | -   | 159  | -                | 3                      | 549                            | -                  | -                 | -                         | -     | 789   | KANSAS         |  |
| KENTUCKY       | 12/30               | 11,500   | 6,363                               | 5,821  | 842                                      | 6,137                       | -                            | 1,969   | 2,398   | 428  | -                | 21                     | 295                            | -                  | -                 | -                         | -     | 1,853   | KENTUCKY       |  |
| LOUISIANA      | 12/31               | 9,053  | 2,766                               | 2,509  | 267                                      | 8,287                       | -                            | 5,082   | -   | 16   | 1                | 123                    | 60                             | -                  | -                 | -                         | -     | 1,074   | LOUISIANA      |  |
| MAINE          | 12/31               | 1,911  | 230                                 | -  | -  | 1,681                       | 4                            | 1,335   | 7   | 235  | -                | -                      | 100                            | -                  | -                 | -                         | -     | 123   | MAINE          |  |
| MARYLAND       | 9/30                | 2,666  | -                                   | -  | -  | 2,666                       | -                            | 398   | 1,131   | 43   | -                | 53                     | 1,250                          | -                  | -                 | -                         | -     | 137   | MARYLAND       |  |
| MASSACHUSETTS  | 12/30               | 1,687  | 843                                 | 739  | 104                                      | 6,770                       | 86                           | 51  | 265   | 71   | -                | 23                     | 2,221                          | -                  | -                 | -                         | -     | 137   | MASSACHUSETTS  |  |
| MICHIGAN       | 12/31               | 7,613  | -                                   | -  | -  | 6,770                       | 86                           | 3,479   | 589   | 128  | -                | 268                    | 2,221                          | -                  | -                 | -                         | -     | 469   | MICHIGAN       |  |
| MINNESOTA      | 12/31               | 6,947  | 331                                 | 334  | 801                                      | 6,616                       | 281                          | 5,298   | -   | -  | -                | 77                     | 936                            | -                  | -                 | -                         | -     | 11  | MINNESOTA      |  |
| MISSISSIPPI    | 12/31               | 6,839  | 2,403                               | 1,794  | 603                                      | 4,636                       | 1                            | 4,071   | 11  | 51   | 8                | 14                     | 360                            | -                  | -                 | -                         | -     | 216   | MISSISSIPPI    |  |
| MISSOURI       | 12/31               | 7,527  | 3,259                               | 2,000  | 1,259                                    | 4,268                       | 1                            | 2,420   | -   | 94   | -                | 8                      | 5/ 1,733                       | -                  | -                 | -                         | -     | 46  | MISSOURI       |  |
| MONTANA        | 12/31               | 8,007  | 6,653                               | 5,404  | 249                                      | 1,354                       | -                            | 1,305   | -   | 5  | -                | 7                      | 21                             | -                  | -                 | -                         | -     | 50  | MONTANA        |  |
| NEBRASKA       | 12/31               | 8,012  | 4,135                               | 3,334  | 801                                      | 3,877                       | 154                          | 3,561   | -   | -  | 3                | 13                     | 95                             | -                  | -                 | -                         | -     | 1,845   | NEBRASKA       |  |
| NEVADA         | 12/31               | 3,654  | 2,123                               | 1,992  | 131                                      | 1,431                       | -                            | 1,26  | -   | 147  | -                | 2                      | 51                             | -                  | -                 | -                         | -     | 2   | NEVADA         |  |
| NEW HAMPSHIRE  | 12/31               | 2,365  | 201                                 | 103  | 98                                       | 2,164                       | -                            | 1,769   | 112   | 167  | -                | 71                     | 55                             | -                  | -                 | -                         | -     | 55  | NEW HAMPSHIRE  |  |
| NEW JERSEY     | 12/31               | 1,821  | 140                                 | 5  | 135                                      | 1,681                       | -                            | 286   | 131   | 30   | 91               | 278                    | 814                            | -                  | -                 | -                         | -     | -   | NEW JERSEY     |  |
| NEW MEXICO     | 12/31               | 9,354  | 7,344                               | 6,355  | 999                                      | 2,010                       | -                            | 1,936   | -   | -  | -                | 1                      | 73                             | -                  | -                 | -                         | -     | 101   | NEW MEXICO     |  |
| NEW YORK       | 12/31               | 13,817   | 3,366                               | 3,331  | 25                                       | 10,561                      | 2,252                        | 359   | 1,989   | 3,794                                      | 66               | 266                    | 4,115                          | -                  | -                 | -                         | -     | 12  | NEW YORK       |  |
| NORTH CAROLINA | 12/31               | 7,137  | 747                                 | -  | 6/ 747                                   | 6,390                       | -                            | 389   | 205   | 458  | -                | 854                    | 2,165                          | -                  | -                 | -                         | -     | 94  | NORTH CAROLINA |  |
| NORTH DAKOTA   | 12/31               | 7,205  | 4,960                               | 3,342  | 1,618                                    | 2,245                       | -                            | 2,235   | -   | -  | -                | 1                      | 9                              | -                  | -                 | -                         | -     | 20  | NORTH DAKOTA   |  |
| OHIO           | 12/31               | 8/10, 963  | 456                                 | 250  | 206                                      | 10,487                      | -                            | 3,837   | 1,496   | 1,716                                      | 39               | 174                    | 1,812                          | -                  | -                 | -                         | -     | 47  | OHIO           |  |
| OKLAHOMA       | 12/31               | 6,182  | 4,174                               | 2,737  | 1,445                                    | 3,737                       | -                            | 2,483   | -   | 21   | 187              | 187                    | 812                            | -                  | -                 | -                         | -     | -   | OKLAHOMA       |  |
| OREGON         | 12/31               | 3,388  | 1,282                               | 1,282  | 1,100                                    | 3,186                       | -                            | 2,483   | -   | 112  | -                | 687                    | 208                            | -                  | -                 | -                         | -     | 25  | OREGON         |  |
| PENNSYLVANIA   | 5/15                | 13,350   | 4,164                               | -  | 4,164                                    | 9,186                       | -                            | 1,513   | 2,272   | 410  | 193              | 327                    | 4,068                          | -                  | -                 | -                         | -     | 1,163   | PENNSYLVANIA   |  |
| RHODE ISLAND   | 12/31               | 920  | 408                                 | 225  | 183                                      | 512                         | -                            | 23  | 116   | 157  | 11               | 115                    | 90                             | -                  | -                 | -                         | -     | 53  | RHODE ISLAND   |  |
| SOUTH CAROLINA | 12/31               | 6,810  | 1,153                               | 1,042  | 111                                      | 4,667                       | 3,322                        | 529   | 38  | 11   | 136              | 179                    | 442                            | -                  | -                 | -                         | -     | 218   | SOUTH CAROLINA |  |
| SOUTH DAKOTA   | 12/31               | 5,976  | 2,562                               | 995  | 1,567                                    | 3,413                       | 20                           | 3,378   | -   | 6  | -                | 9                      | -                              | -                  | -                 | -                         | -     | 40  | SOUTH DAKOTA   |  |
| TENNESSEE      | 6/30                | 5,870  | 1,336                               | 940  | 396                                      | 4,534                       | -                            | 2,133   | 1,225   | 596  | 35               | 80                     | 465                            | -                  | -                 | -                         | -     | 837   | TENNESSEE      |  |
| TEXAS          | 12/31               | 19,728   | 7,979                               | 6,855  | 1,124                                    | 10,749                      | 237                          | 6,122   | 521   | 2,405                                      | 17               | 223                    | 1,141                          | -                  | -                 | -                         | -     | -   | TEXAS          |  |
| UTAH           | 12/31               | 3,458  | 1,815                               | 591  | 1,224                                    | 1,643                       | -                            | 1,291   | 68  | 5  | 12               | 52                     | 215                            | -                  | -                 | -                         | -     | 22  | UTAH           |  |
| VERMONT        | 12/31               | 820  | 62                                  | 758  | 3,384                                    | 1,000                       | -                            | 2,116   | 49  | 68   | -                | -                      | 151                            | -                  | -                 | -                         | -     | -   | VERMONT        |  |
| VIRGINIA       | 12/31               | 4,204  | 2,210                               | 1,655  | 555                                      | 4,722                       | -                            | 845   | 1,206   | 713  | 10               | 3                      | 686                            | -                  | -                 | -                         | -     | 1,687   | VIRGINIA       |  |
| WASHINGTON     | 12/31               | 3,262  | 528                                 | 334  | 194                                      | 2,734                       | -                            | 1,983   | -   | 32   | 2                | 43                     | 682                            | -                  | -                 | -                         | -     | 38  | WASHINGTON     |  |
| WEST VIRGINIA  | 12/31               | 1,428  | 1,428                               | 589  | 860                                      | 2,392                       | -                            | 1,983   | 149   | 90   | 1                | 90                     | 535                            | -                  | -                 | -                         | -     | -   | WEST VIRGINIA  |  |
| WISCONSIN      | 12/31               | 10,211   | 1,579                               | 1,579  | 860                                      | 8,642                       | 46                           | 5,360   | 552   | 125  | 4                | 12                     | 2,541                          | -                  | -                 | -                         | -     | 58  | WISCONSIN      |  |
| WYOMING        | 12/31               | 3,118  | 1,505                               | 1,175  | 331                                      | 1,306                       | -                            | 1,257   | -   | 27   | -                | 27                     | 12                             | -                  | -                 | -                         | -     | 28  | WYOMING        |  |
| TOTAL          |                     | 306,442  | 113,304                             | 81,549   | 31,755                                   | 183,139                     | 13,499                       | 93,124  | 19,112  | 15,800                                     | 1,498            | 5,392                  | 42,957                         | -                  | -                 | -                         | -     | 13,089  | TOTAL          |  |

NOTES: 1/ HIGHWAYS UNDER CONTROL OF STATE HIGHWAY DEPARTMENTS, AND DO NOT INCLUDE ROADS UNDER CONTROL OF COUNTY AND LOCAL AUTHORITY.

2/ OILED TOP-901L.

3/ APPROXIMATE, AS IMPROVED EARTH, SAND-CLAY, GRAVEL AND MACADAM REPORTED TOGETHER BY STATE.

4/ DECREASE OF 111 MILES BY REVISION OF SYSTEM.

5/ INCLUDES 378 MILES HAVING 9 FOOT WIDTH OF CONCRETE.

6/ INCLUDES 108 MILES OF SAND ASPHALT.

7/ BRIDGE FLOORING.

8/ TOTAL MILEAGE DUE TO ANNEXTION BY EXTENSION OF CORPORATE LIMITS.

9/ DECREASE IN MILES OF KENTUCKY ROCK ASPHALT.

10/ ESTIMATED FROM PREVIOUS YEARS' DATA.





WV-2(1929),  
R B. A.

MOTOR VEHICLE REGISTRATION FEE, LICENSE, PERMIT, FINE, ETC., 1928  
ALSO GROS RECEIPTS AND DISPOSITION OF FUND 1/  
FOR CALENDAR YEAR 1928

(COMPILLED FROM REPORTS OF STATE AUTHORITIES)

| STATES 2/            | TOTAL<br>DOLLS<br>REC'D PFTS | VEHICLE REGISTRATION REC'D PFTS 2/ |                        |                        | OTHER VEHICLES |                | MISCELLANEOUS REC'D PFTS 2/ |                        |                   | COLLECTION<br>AND ADMIN-<br>ISTRATION | DISTRIBUTION OF 50065 RECEIPTS |                         |                          | STATES 2/   |                      |
|----------------------|------------------------------|------------------------------------|------------------------|------------------------|----------------|----------------|-----------------------------|------------------------|-------------------|---------------------------------------|--------------------------------|-------------------------|--------------------------|-------------|----------------------|
|                      |                              | TOTAL<br>MOTOR CAR<br>DOLLS        | PASSENGER CAR<br>DOLLS | TRUCKS AND<br>TRACTORS | TRAILERS       | SALES<br>TAXES | CHARTER<br>PERMITS          | OTHER<br>MISCELLANEOUS | STATE<br>HIGHWAYS |                                       | LOCAL<br>ROADS                 | STATE & COUNTY<br>ROADS | FOR<br>OTHER<br>PURPOSES |             |                      |
| ALABAMA 2/           | \$3,474,066                  | -                                  | -                      | -                      | -              | \$433,848      | \$300,392                   | \$132,884              | \$12,008          | \$111,690                             | \$151,721                      | \$1,076,501             | \$677,443                | \$1,569,400 | ALABAMA 2/           |
| ARIZONA              | 565,008                      | -                                  | -                      | -                      | -              | 3,706,291      | -                           | -                      | 21,356            | 18,923                                | -                              | 686,606                 | -                        | -           | ARIZONA              |
| ARKANSAS             | 3,786,004                    | -                                  | -                      | -                      | -              | 3,706,291      | -                           | -                      | 330,476           | 900,548                               | -                              | 3,910,311               | 2,309,462                | 5/          | ARKANSAS             |
| CALIFORNIA           | 9,292,301                    | 1,857,628                          | 2,652,918              | 2,332,432              | 4/             | 2,652,918      | 2,652,918                   | 2,332,432              | 181,871           | 82,295                                | -                              | 166,313                 | 811,335                  | -           | CALIFORNIA           |
| COLORADO             | 1,200,183                    | 1,200,183                          | 1,200,183              | 1,200,183              | -              | 1,200,183      | 1,200,183                   | 1,200,183              | 1,739,816         | 1,739,816                             | -                              | 1,739,816               | -                        | -           | COLORADO             |
| CONNECTICUT          | 1,739,816                    | 1,739,816                          | 1,739,816              | 1,739,816              | -              | 1,739,816      | 1,739,816                   | 1,739,816              | 1,739,816         | 1,739,816                             | -                              | 1,739,816               | -                        | -           | CONNECTICUT          |
| DELAWARE             | 4,329,918                    | 1,745,256                          | 1,745,256              | 1,745,256              | 4,641          | 1,745,256      | 1,745,256                   | 1,745,256              | 1,739,816         | 1,739,816                             | -                              | 1,739,816               | -                        | -           | DELAWARE             |
| FLORIDA              | 4,935,995                    | 4,935,995                          | 4,935,995              | 4,935,995              | -              | 4,935,995      | 4,935,995                   | 4,935,995              | 24,926            | 24,926                                | -                              | 3,201,150               | 1,165,449                | 6/          | FLORIDA              |
| GEORGIA              | 4,041,761                    | 3,976,763                          | 3,976,763              | 3,976,763              | -              | 3,976,763      | 3,976,763                   | 3,976,763              | 143,088           | 143,088                               | -                              | 3,899,979               | -                        | -           | GEORGIA              |
| IDAH0                | 1,626,949                    | 1,626,949                          | 1,626,949              | 1,626,949              | -              | 1,626,949      | 1,626,949                   | 1,626,949              | 13,900            | 13,900                                | -                              | 1,460,400               | -                        | -           | IDAH0                |
| ILLINOIS             | 15,921,520                   | 14,571,770                         | 14,571,770             | 14,571,770             | -              | 14,571,770     | 14,571,770                  | 14,571,770             | 331,298           | 438,350                               | -                              | 9,337,237               | 8,149,016                | 7/          | ILLINOIS             |
| INDIANA              | 10,632,761                   | 10,133,709                         | 10,133,709             | 10,133,709             | -              | 10,133,709     | 10,133,709                  | 10,133,709             | 293,652           | 293,652                               | -                              | 9,842,533               | -                        | -           | INDIANA              |
| IOWA                 | 1,300,000                    | 1,300,000                          | 1,300,000              | 1,300,000              | -              | 1,300,000      | 1,300,000                   | 1,300,000              | 1,775             | 1,775                                 | -                              | 1,894,091               | -                        | 8/          | IOWA                 |
| KANSAS               | 5,394,248                    | 5,316,893                          | 5,316,893              | 5,316,893              | -              | 5,316,893      | 5,316,893                   | 5,316,893              | 177,565           | 266,846                               | -                              | 3,213,511               | 1,894,091                | -           | KANSAS               |
| KENTUCKY             | 4,726,258                    | 4,582,043                          | 4,582,043              | 4,582,043              | -              | 4,582,043      | 4,582,043                   | 4,582,043              | 177,565           | 266,846                               | -                              | 3,213,511               | 1,894,091                | -           | KENTUCKY             |
| LOUISIANA            | 4,353,634                    | 4,303,807                          | 4,303,807              | 4,303,807              | -              | 4,303,807      | 4,303,807                   | 4,303,807              | 282               | 282                                   | -                              | 4,393,634               | -                        | -           | LOUISIANA            |
| MAINE                | 2,632,698                    | 2,147,118                          | 2,147,118              | 2,147,118              | -              | 2,147,118      | 2,147,118                   | 2,147,118              | 136,283           | 220,513                               | -                              | 1,354,283               | 1,038,802                | 10/         | MAINE                |
| MARYLAND             | 13,914,421                   | 12,964,813                         | 12,964,813             | 12,964,813             | -              | 12,964,813     | 12,964,813                  | 12,964,813             | 333,508           | 333,508                               | -                              | 1,224,234               | 1,038,802                | 11/         | MARYLAND             |
| MASSACHUSETTS        | 20,056,648                   | 18,367,187                         | 18,367,187             | 18,367,187             | -              | 18,367,187     | 18,367,187                  | 18,367,187             | 1,352,412         | 1,352,412                             | -                              | 994,696                 | 994,696                  | 12/         | MASSACHUSETTS        |
| MICHIGAN             | 10,101,785                   | 10,010,851                         | 10,010,851             | 10,010,851             | -              | 10,010,851     | 10,010,851                  | 10,010,851             | 1,072,718         | 1,072,718                             | -                              | 18,242,720              | 6,000,000                | -           | MICHIGAN             |
| MINNESOTA            | 2,814,150                    | 2,814,150                          | 2,814,150              | 2,814,150              | -              | 2,814,150      | 2,814,150                   | 2,814,150              | 28,506            | 28,506                                | -                              | 6,507,230               | 1,594,555                | 13/         | MINNESOTA            |
| MISSISSIPPI 2/       | 1,588,669                    | -                                  | -                      | -                      | -              | -              | -                           | -                      | -                 | -                                     | -                              | 140,707                 | 184,182                  | 2/          | MISSISSIPPI 2/       |
| MISSOURI 2/          | 1,298,628                    | -                                  | -                      | -                      | -              | -              | -                           | -                      | -                 | -                                     | -                              | 370,000                 | 5,288,109                | 13/         | MISSOURI 2/          |
| NEBRASKA             | 3,950,748                    | 3,128,512                          | 3,128,512              | 3,128,512              | -              | 3,128,512      | 3,128,512                   | 3,128,512              | 118,131           | 118,131                               | -                              | 1,145,797               | 2,682,860                | -           | NEBRASKA             |
| NEW HAMPSHIRE        | 2,070,957                    | 1,673,914                          | 1,673,914              | 1,673,914              | -              | 1,673,914      | 1,673,914                   | 1,673,914              | 84,132            | 84,132                                | -                              | 1,906,428               | 127,556                  | 14/         | NEW HAMPSHIRE        |
| NEW JERSEY           | 13,589,025                   | 9,933,554                          | 9,933,554              | 9,933,554              | -              | 9,933,554      | 9,933,554                   | 9,933,554              | 673,839           | 673,839                               | -                              | 849,699                 | 4,636,976                | 15/         | NEW JERSEY           |
| NEW MEXICO           | 827,761                      | 539,781                            | 3,169,674              | 4,066                  | 539,781        | 3,169,674      | 4,066                       | 539,781                | 13,679            | 70,406                                | -                              | 371,633                 | 188,712                  | -           | NEW MEXICO           |
| NEW YORK             | 34,306,706                   | 31,084,438                         | 22,301,399             | 81,851                 | 31,084,438     | 22,301,399     | 81,851                      | 31,084,438             | 3,706             | 1,785,572                             | -                              | 23,999,877              | 6,196,770                | 16/         | NEW YORK             |
| NORTH CAROLINA 2/    | 8,088,140                    | 1,790,306                          | 1,790,306              | 1,790,306              | -              | 1,790,306      | 1,790,306                   | 1,790,306              | 3,976,334         | 3,976,334                             | -                              | 300,000                 | 1,812,806                | -           | NORTH CAROLINA 2/    |
| NORTH DAKOTA         | 1,715,145                    | 1,715,145                          | 1,715,145              | 1,715,145              | -              | 1,715,145      | 1,715,145                   | 1,715,145              | 474               | 474                                   | -                              | 170,000                 | 867,672                  | 17/         | NORTH DAKOTA         |
| OKLAHOMA 2/          | 8,259,610                    | 11,285,591                         | 6,404,866              | 329,667                | 11,285,591     | 6,404,866      | 329,667                     | 11,285,591             | 389,309           | 389,309                               | -                              | 386,500                 | 5,757,872                | -           | OKLAHOMA 2/          |
| OREGON               | 6,989,221                    | 80,750,469                         | 6,741,931              | 978,538                | 80,750,469     | 6,741,931      | 978,538                     | 80,750,469             | 59,880            | 149,756                               | -                              | 300,000                 | 3,336,061                | -           | OREGON               |
| PENNSYLVANIA         | 27,113,177                   | 20,150,327                         | 14,388,318             | 6,378,009              | 20,150,327     | 14,388,318     | 6,378,009                   | 20,150,327             | 2,898,658         | 3,791,746                             | -                              | 20,699,765              | 1,667,306                | 18/         | PENNSYLVANIA         |
| RHODE ISLAND         | 2,273,419                    | 1,386,886                          | 432,282                | 1,419                  | 1,386,886      | 432,282        | 1,419                       | 1,386,886              | 131,925           | 231,906                               | -                              | 2,031,516               | 30,348                   | -           | RHODE ISLAND         |
| SOUTH CAROLINA       | 2,420,539                    | 2,821,672                          | 1,941,501              | 335,971                | 2,821,672      | 1,941,501      | 335,971                     | 2,821,672              | 106,307           | 25,398                                | -                              | 2,416,141               | 1,392,002                | -           | SOUTH CAROLINA       |
| SOUTH DAKOTA         | 2,901,968                    | 2,901,968                          | 2,460,721              | 351,670                | 2,901,968      | 2,460,721      | 351,670                     | 2,901,968              | 1,801             | 1,801                                 | -                              | 69,301                  | 1,460,002                | -           | SOUTH DAKOTA         |
| TENNESSEE 2/         | 17,707,251                   | 16,890,630                         | 14,111,570             | 2,942,960              | 16,890,630     | 14,111,570     | 2,942,960                   | 16,890,630             | 30,203            | 474,107                               | -                              | 10,677,464              | 7,188,585                | 19/         | TENNESSEE 2/         |
| UTAH 2/              | 131,340                      | -                                  | -                      | -                      | -              | -              | -                           | -                      | 30,203            | 474,107                               | -                              | 130,000                 | 343,370                  | 20/         | UTAH 2/              |
| VERMONT              | 2,050,960                    | 1,783,737                          | 1,497,625              | 288,112                | 1,783,737      | 1,497,625      | 288,112                     | 1,783,737              | 43,946            | 43,946                                | -                              | 2,090,960               | 251,970                  | -           | VERMONT              |
| VIRGINIA             | 6,672,048                    | 6,368,404                          | 4,342,248              | 825,305                | 6,368,404      | 4,342,248      | 825,305                     | 6,368,404              | 887,156           | 960,000                               | -                              | 5,312,406               | -                        | -           | VIRGINIA             |
| WASHINGTON           | 7,029,281                    | 6,368,404                          | 4,342,248              | 825,305                | 6,368,404      | 4,342,248      | 825,305                     | 6,368,404              | 887,156           | 960,000                               | -                              | 5,312,406               | -                        | -           | WASHINGTON           |
| WEST VIRGINIA        | 4,142,596                    | 3,986,997                          | 2,981,640              | 3,986                  | 3,986,997      | 2,981,640      | 3,986                       | 3,986,997              | 602,281           | 7,943                                 | -                              | 285,454                 | 2,038,966                | 22/         | WEST VIRGINIA        |
| WISCONSIN            | 10,632,761                   | 10,632,761                         | 10,632,761             | 10,632,761             | -              | 10,632,761     | 10,632,761                  | 10,632,761             | 156,088           | 239,913                               | -                              | 2,662,882               | 2,640,000                | -           | WISCONSIN            |
| WYOMING              | 1,300,000                    | 1,300,000                          | 1,300,000              | 1,300,000              | -              | 1,300,000      | 1,300,000                   | 1,300,000              | 1,388,547         | 1,388,547                             | -                              | 5,646,210               | 4,490,000                | -           | WYOMING              |
| DISTRICT OF COLUMBIA | 473,981                      | 136,454                            | 113,606                | 21,929                 | -              | 136,454        | 113,606                     | 21,929                 | 108,076           | 233,526                               | -                              | 132,627                 | 572,670                  | 23/         | DISTRICT OF COLUMBIA |
| DETAILED TOTALS 2/   | 288,893,694                  | 258,597,541                        | 1,402,181              | 397,078                | 1,402,181      | 1,402,181      | 397,078                     | 1,402,181              | 14,725,475        | 12,127,096                            | -                              | 208,880,272             | 50,399,169               | -           | DETAILED TOTALS 2/   |
| GRAND TOTAL 6        | 322,630,025                  | -                                  | -                      | -                      | -              | -              | -                           | -                      | -                 | -                                     | -                              | 31,819,911              | 6,390,724                | -           | GRAND TOTAL 6        |

NOTES:

- 1/ FINANCIAL DATA ONLY ON THIS TABLE; FOR NUMBER OF REGISTRATIONS, ETC. \* SEE TABLE MM-1 (1928).
- 2/ REVENUE STATES DO NOT REPORT COMPLETE DETAILS AND RECEIPTS ARE NOT INCLUDED IN "DETAIL TOTALS".
- 3/ INCLUDED \$340,740 ON STATE BONDS AND \$1,988,722 ON COUNTY BONDS.
- 4/ INCLUDED WITH "OTHER MISCELLANEOUS".
- 5/ REVOLVING FUND RESERVE.
- 6/ BALANCE OF STATE GENERAL FUND.
- 7/ IN STATE GENERAL FUND.
- 8/ IN STATE GENERAL FUND.
- 9/ APPROPRIATION \$45,000 FROM STATE GENERAL FUND.
- 10/ FOR TRAFFIC POLICE.
- 11/ FOR TRAFFIC CONTROL.
- 12/ FOR TRAFFIC CONTROL.
- 13/ AUTO-THIEF FUND.
- 14/ INCLUDED IN MISCELLANEOUS.
- 15/ FOR STATE HIGHWAY OFFICE BUILDING.
- 16/ TO NEW YORK CITY GENERAL FUND.
- 17/ INCLUDES \$130,000 FOR STATE HIGHWAY.
- 18/ ON STATE BONDS, ALLOTTED FROM STATE HIGHWAY FUND.
- 19/ ON STATE BONDS, ALLOTTED FROM STATE HIGHWAY FUND.
- 20/ ONLY EXPENSES OF LAW ENFORCEMENT REPORTED; OTHER EXPENSES FROM HIGHWAY FUND.
- 21/ APPROPRIATED FROM STATE GENERAL FUND.
- 22/ STATE HIGHWAY PATROL.
- 23/ FOR TRAFFIC CONTROL AND STREETS, IF SO APPROPRIATED BY CONGRESS.





(COMPILED FROM REPORTS OF STATE AUTHORITIES)

MOTOR VEHICLE REGISTRATIONS, 1928, 1  
(CALENDAR YEAR)

| STATES         | 2/ 1928-REGISTERED MOTOR VEHICLES<br>INDIVIDUALLY & COMMERCIALY OWNED |                         |   |                      | OTHER REGISTERED<br>VEHICLES |                  | TAX-EXEMPT OFFICIALS'<br>MOTOR CARS AND MOTORCYCLES |                               | NUMBER OF LICENSES,<br>OR PERMITS |                                | 1927<br>GRAND TOTAL: VEHICLE REGISTRATIONS |   | STATES         |
|----------------|---|-------------------------|---|----------------------|------------------------------|------------------|---|-------------------------------|-----------------------------------|--------------------------------|--|---|----------------|
|                | GRAND TOTAL   | PASSENGER<br>REGISTERED | AUTOMOBILE,<br>MOTOR CARS &<br>TRUCKS &<br>ROAD | TRUCKS &<br>TRAILERS | TRAILERS                     | MOTOR-<br>CYCLES | U.S.<br>CARB  | STATE<br>AND<br>LOCAL<br>CARS | DEALERB<br>AND<br>CHAUFFEURB      | OPERATORB<br>AND<br>CHAUFFEURB | REGISTERED                                 | % YEAR'S CHANGE IN MOTOR<br>VEHICLE REGISTRATIONS<br>MOTOR CARS : INCREASE OR % PER CENT<br>AND TRUCKS : DECREASE (-) : |                |
| ALABAMA        | 269,618   | 236,026                 | 34,493  | 1,952                | 611                          | 167              | 666   | -                             | 586                               | 1,097                          | 243,539                                    | 26,980  | ALABAMA        |
| ARIZONA        | 84,372  | 86,036                  | 8,336   | 809                  | 281                          | 176              | 985   | -                             | 1,039                             | 12,342                         | 81,047                                     | 13,326  | ARIZONA        |
| ARKANSAS       | 214,931   | 181,880                 | 33,651  | 2,054                | 342                          | 39               | 861   | 27                            | 508                               | 4,085                          | 206,568                                    | 8,363   | ARKANSAS       |
| CALIFORNIA     | 1,799,880   | 1,682,477               | 217,413   | 37,073               | 9,449                        | 1,217            | 13,826  | 149                           | -                                 | 263,345                        | 1,693,196                                  | 106,695   | CALIFORNIA     |
| COLORADO       | 284,887   | 260,908                 | 23,961  | 85                   | 1,234                        | 283              | -   | -                             | 3,647                             | 7,977                          | 268,192                                    | 16,376  | COLORADO       |
| CONNECTICUT    | 309,792   | 261,091                 | 48,701  | 224                  | 2,497                        | 71               | 1,923   | 168                           | 3,751                             | 337,623                        | 281,521                                    | 26,271  | CONNECTICUT    |
| DELAWARE       | 352,961   | 41,195                  | 10,015  | 301                  | 345                          | 44               | -   | -                             | 610                               | 56,923                         | 47,124                                     | 4,086   | DELAWARE       |
| FLORIDA        | 394,773   | 296,691                 | 68,270  | 4,000                | 1,127                        | 76               | 3,662   | 233                           | 2,047                             | 2,853                          | 394,773                                    | -41,773   | FLORIDA        |
| GEORGIA        | 318,858   | 277,881                 | 40,975  | 816                  | 1,078                        | 934              | -   | -                             | 1,156                             | 2,301                          | 300,635                                    | 18,221  | GEORGIA        |
| IDAH0          | 108,154   | 96,960                  | 11,194  | 264                  | 406                          | 103              | 1,231   | 18                            | 458                               | 396                            | 101,338                                    | 6,818   | IDAH0          |
| ILLINOIS       | 1,504,369   | 1,314,003               | 190,356   | 3,742                | 6,826                        | 979              | -   | -                             | 4,548                             | 94,169                         | 1,438,985                                  | 65,374  | ILLINOIS       |
| INDIANA        | 823,806   | 706,713                 | 117,093   | 7,884                | 3,184                        | 3,184            | 4,531   | -                             | 2,716                             | 39,021                         | 813,637                                    | 10,169  | INDIANA        |
| IOWA           | 733,466   | 672,447                 | 61,019  | 230                  | 1,728                        | 44               | 3,200   | -                             | 2,439                             | 15,563                         | 704,203                                    | 29,263  | IOWA           |
| KANSAS         | 533,799   | 471,887                 | 61,902  | 359                  | 1,199                        | 192              | 2,463   | 60                            | 2,676                             | 9,146                          | 501,901                                    | 31,898  | KANSAS         |
| KENTUCKY       | 304,231   | 272,636                 | 31,595  | 4,000                | 558                          | 90               | 1,910   | 66                            | 1,138                             | 16,029                         | 285,821                                    | 18,610  | KENTUCKY       |
| LOUISIANA      | 269,293   | 223,446                 | 40,848  | 1,068                | 1,219                        | 64               | 1,326   | 76                            | 489                               | 16,029                         | 255,000                                    | 9,293   | LOUISIANA      |
| MAINE          | 172,538   | 139,490                 | 33,178  | 1,219                | 1,068                        | 64               | 1,326   | 76                            | 1,155                             | 203,353                        | 153,623                                    | 9,016   | MAINE          |
| MARYLAND       | 285,311   | 276,221                 | 10,090  | 683                  | 2,232                        | 1,969            | 1,500   | -                             | 5,853                             | 76,669                         | 276,863                                    | 8,448   | MARYLAND       |
| MASSACHUSETTS  | 726,295   | 637,153                 | 89,142  | 547                  | 6,856                        | 656              | -   | -                             | 2,370                             | 870,180                        | 594,107                                    | 32,188  | MASSACHUSETTS  |
| MICHIGAN       | 1,249,221   | 1,084,618               | 164,606   | 23,198               | 3,686                        | 371              | -   | -                             | 2,192                             | 311,413                        | 1,154,773                                  | 94,448  | MICHIGAN       |
| MINNESOTA      | 673,573   | 683,789                 | 69,784  | 3,894                | 2,083                        | 252              | 1,153   | -                             | 2,144                             | -                              | 646,682                                    | 26,091  | MINNESOTA      |
| MISSISSIPPI    | 246,842   | 214,754                 | 31,488  | 2,919                | 69                           | 74               | -   | -                             | 660                               | -                              | 218,043                                    | 28,199  | MISSISSIPPI    |
| MISSOURI       | 712,965   | 636,717                 | 76,248  | 2,004                | 1,821                        | 311              | 1,472   | 3                             | 2,572                             | 29,222                         | 682,418                                    | 30,546  | MISSOURI       |
| MONTANA        | 126,036   | 104,231                 | 21,804  | 2,976                | 1,026                        | 229              | 1,242   | -                             | 512                               | 210                            | 112,735                                    | 13,300  | MONTANA        |
| NEBRASKA       | 391,356   | 356,173                 | 33,182  | 2,976                | 1,026                        | 229              | 1,242   | -                             | 3,344                             | -                              | 373,912                                    | 17,443  | NEBRASKA       |
| NEVADA         | 27,376  | 21,733                  | 6,643   | 178                  | 94                           | 42               | 442   | -                             | 115                               | -                              | 26,776                                     | 1,600   | NEVADA         |
| NEW HAMPSHIRE  | 108,644   | 88,594                  | 14,080  | 545                  | 1,330                        | 22               | -   | -                             | 96,009                            | 6,635                          | 96,009                                     | 6,635   | NEW HAMPSHIRE  |
| NEW JERSEY     | 780,649   | 689,749                 | 180,882   | 1,996                | 6,633                        | 709              | 6,353   | 846                           | 3,178                             | 1,186,736                      | 712,396                                    | 46,034  | NEW JERSEY     |
| NEW MEXICO     | 66,737  | 53,743                  | 11,994  | 340                  | 248                          | 186              | 746   | 2                             | 801                               | 6,446                          | 59,291                                     | 6,446   | NEW MEXICO     |
| NEW YORK       | 2,083,942   | 1,760,649               | 323,393   | 7,148                | 14,594                       | 1,666            | 14,153  | 1,208                         | 4,852                             | 2,494,156                      | 1,937,918                                  | 146,024   | NEW YORK       |
| NORTH CAROLINA | 464,376   | 418,864                 | 46,512  | 1,944                | 1,244                        | 429              | 6,200   | -                             | 1,103                             | -                              | 430,499                                    | 33,877  | NORTH CAROLINA |
| NORTH DAKOTA   | 173,525   | 161,778                 | 21,747  | -                    | 236                          | 3                | -   | -                             | -                                 | -                              | 160,701                                    | 12,824  | NORTH DAKOTA   |
| OHIO           | 1,649,699   | 1,450,994               | 198,706   | 14,506               | 9,472                        | 2,362            | 10,097  | -                             | 3,987                             | 4,419                          | 1,670,734                                  | 78,965  | OHIO           |
| OKLAHOMA       | 529,843   | 485,650                 | 64,293  | 601                  | 1,184                        | 530              | -   | -                             | 1,384                             | -                              | 503,128                                    | 26,717  | OKLAHOMA       |
| OREGON         | 248,118   | 227,404                 | 20,714  | 1,238                | 2,012                        | 141              | 1,294   | 34                            | 581                               | 49,250                         | 244,572                                    | 3,546   | OREGON         |
| PENNSYLVANIA   | 1,642,207   | 1,420,967               | 221,260   | 4,286                | 13,807                       | 1,383            | 943   | -                             | 4,300                             | 1,983,455                      | 1,554,915                                  | 87,292  | PENNSYLVANIA   |
| RHODE ISLAND   | 125,698   | 106,155                 | 19,543  | 61                   | 1,071                        | 56               | 696   | 95                            | 318                               | 144,876                        | 118,014                                    | 7,684   | RHODE ISLAND   |
| SOUTH CAROLINA | 218,806   | 194,267                 | 22,538  | 1,637                | 432                          | 91               | 2,654   | -                             | 658                               | -                              | 199,635                                    | 17,170  | SOUTH CAROLINA |
| SOUTH DAKOTA   | 191,374   | 171,067                 | 20,307  | -                    | 230                          | 86               | 945   | -                             | 1,061                             | -                              | 169,552                                    | 21,822  | SOUTH DAKOTA   |
| TENNESSEE      | 322,137   | 294,305                 | 27,832  | 7/                   | 1,059                        | 132              | 3,289   | -                             | 693                               | -                              | 284,567                                    | 27,570  | TENNESSEE      |
| TEXAS          | 1,214,297   | 1,060,088               | 154,209   | 11,965               | 3,481                        | 2,505            | -   | -                             | 3,881                             | 10,178                         | 1,111,407                                  | 102,890   | TEXAS          |
| UTAH           | 98,541  | 84,280                  | 14,261  | -                    | 580                          | 173              | -   | -                             | -                                 | -                              | 93,974                                     | 4,567   | UTAH           |
| VERMONT        | 86,231  | 78,685                  | 7,546   | 248                  | 521                          | 28               | -   | -                             | 376                               | 89,606                         | 79,527                                     | 6,704   | VERMONT        |
| VIRGINIA       | 300,546   | 306,911                 | 53,634  | 646                  | 2,158                        | 1,141            | 3,082   | 143                           | 3,584                             | 7,746                          | 337,607                                    | 22,938  | VIRGINIA       |
| WASHINGTON     | 402,876   | 344,577                 | 57,898  | 2,279                | 2,598                        | 637              | 3,981   | 139                           | 4,783                             | 499,149                        | 384,683                                    | 18,292  | WASHINGTON     |
| WEST VIRGINIA  | 251,556   | 215,787                 | 36,769  | 600                  | 1,356                        | 33               | 2,094   | 124                           | 4,108                             | 73,468                         | 245,919                                    | 6,717   | WEST VIRGINIA  |
| WISCONSIN      | 742,136   | 684,747                 | 95,388  | 412                  | 2,746                        | 92               | 1,268   | 180                           | -                                 | -                              | 898,289                                    | 43,846  | WISCONSIN      |
| WYOMING        | 55,336  | 48,760                  | 7,576   | -                    | 128                          | 209              | 296   | -                             | 329                               | -                              | 51,956                                     | 4,381   | WYOMING        |
| DIST. OF COL.  | 126,556   | 112,505                 | 14,051  | -                    | 1,092                        | 837              | 2,188   | 200                           | 1,835                             | 34,026                         | 111,560                                    | 14,876  | DIST. OF COL.  |
| TOTALS         | 24,493,124  | 21,379,126              | 3,113,999                                       | 148,169              | 117,946                      | 8/33,179         | 103,618   | 3,710                         | 9/86,734                          | 9,941,861                      | 23,133,241                                 | 1,359,883   | TOTALS         |

NOTES: 1/ THIS TABLE LISTS ONLY THE NUMBER OF REGISTRATIONS, LICENSES, AND PERMITS:

FOR FINANCIAL STATEMENT (SEE TABLE MV-2(1928)).

2/ THE FIRST THREE COLUMNS SHOW REGULARLY REGISTERED MOTOR CARS AND TRUCKS WHICH

PAY REGULAR LICENSE FEES, ELIMINATING REREGERISTRATION, NONRESIDENT

REGISTRATIONS, ETC. BUSSES ARE INCLUDED WITH PASSENGER CARS EXCEPT AS NOTED.

3/ SOME STATES INCLUDE TRAILERS WITH TRUCKS, OTHERS DO NOT REGISTER SAME.

4/ ESTIMATED.

5/ REPORTED WITH TRACTORS, BUT HERE SEPARATED AS PER SEMI-ANNUAL REPORT.

6/ BUSES REGISTERED WITH TRUCKS.

7/ TRAILERS REGISTERED AS TRUCKS.

8/ AS REPORTED BY BUREAU OF BUDGET IN 1925, AND INCLUDES 7,859 "GARB-AT-LARGE."

9/ NOT ALLOCATED TO ANY STATE.

10/ DECREASE COMPARED TO PREVIOUS YEARS DUE TO ELIMINATED DEALERS' PLATES

FORMERLY REPORTED BY SOME STATES.

